
Saint
Bartholomew's
Hospital

A

DESCRIPTIVE CATALOGUE

OF THE

ANATOMICAL AND PATHOLOGICAL

MUSEUM

OF

St. Bartholomew's Hospital.

A

DESCRIPTIVE CATALOGUE

OF THE

ANATOMICAL AND PATHOLOGICAL MUSEUM

OF

St. Bartholomew's Hospital.

PUBLISHED BY ORDER OF THE GOVERNORS.

VOLUME I.

PATHOLOGY.

LONDON:
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PREFACE

TO THE

PRESENT CATALOGUE.

During the twenty years which have elapsed since the publication of the Appendix to the former Catalogue, more than nine hundred new specimens, forty-four Calculi, over four hundred Drawings, about one hundred Casts and Models, and a collection of nearly two hundred microscopic specimens of Morbid Anatomy, have been added to the Pathological Collection. The Series of Diseases of the Generative Organs and of Deformities of the Pelvis in the Female, have been enriched by the presentation of the collection of Dr. Matthews Duncan in June, 1879.

The whole Pathological Collection has been completely rearranged and renumbered. The anatomical grouping of the Series' of Diseases and Injuries of the various Organs and Structures of the Body has not been materially altered; but in each Series the specimens have been arranged according to a uniform pathological classification. The dry specimens, formerly placed in separate Series, have been interspersed among those preserved in bottles, with the purpose of illustrating more fully the diseases or injuries which they exhibit. Eighty-eight selected specimens from Dr. J. R. Farre's collection have been included in the general Catalogue.

All the descriptions have been revised and collated, and some of them amended or extended.

The specimens are now numbered consecutively throughout the collection.

Descriptions of the microscopic characters of many of the specimens of Morbid Growths have been inserted; some of them were examined by myself and others by Mr. Walsham, who presented his microscopic preparations to the Museum.

In order to preserve the historical interest of the collection, the old nomenclature has, in many instances, been retained in the descriptions, the modern synonyms being placed in brackets.

To render the Catalogue as useful and complete as possible, cross-references have been given in all cases in which specimens show more than one pathological condition, as well as to the Microscopic Preparations, Drawings, and Casts taken from any of the specimens.

A Series of General Pathology has been formed; and a Table of References to specimens in other parts of the Museum illustrating General Pathology, has been appended to the Table of Contents of the Series of General Pathology at the commencement of the volume.

The Series' of Calculi, Microscopic Specimens, Casts, and Drawings have been arranged in accordance with the general plan of the Catalogue.

The specimens included in the former Catalogue may be identified by the old numbers, which are placed at the lower right hand corner of the descriptions.

This Catalogue has been prepared under the directions of the Museum Committee, to whom the various plans for its formation have been submitted.

I have received valuable aid in the revision of many of the Series of Diseases of the Internal Organs, and some special Series of Surgical Pathology, from Members of the Medical and Surgical Staff, especially from Dr. Matthews Duncan and Mr. Marsh. Mr. Marsh has also rendered able assistance by revising the greater portion of the proof-sheets.

FREDERIC S. EVE.

January, 1882.

PREFACE

TO THE

CATALOGUE OF 1831.

In the following description the Natural and Morbid Preparations are arranged in the order of their situation in the Museum; an arrangement originally adopted by Mr. Abernethy, in conformity with the plan of his Anatomical and Physiological Lectures.

The description of each specimen of Morbid Structure will be found to exhibit only the circumstances which are actually visible in it, except in the instances where the description refers to the recent state of the specimen, when its characters of colour and texture were different from those it may now possess.

Whenever it could be safely inferred, from the appearances of the diseased parts, that certain processes were taking place in them at the time of death, these processes are stated. With the description of the specimens of injured and diseased bone, for example, there is an explanation of the processes by which dead bone is exfoliated, and new bone formed in its place.

In the formation of the Museum only those morbid specimens have been preserved which might be expected to retain their original characters in a sufficient degree to render them useful as objects of future reference. Without this explanation the experienced pathologist would expect to find in the collection more numerous specimens of some organs in the human body which are subject to frequent alterations in their structure.

It is due to the liberality of Dr. Conquest here to record the gift of his private Collection of Preparations, which have so greatly enriched those departments of the Museum to which they belong.

EDWARD STANLEY.

PREFACE

TO THE

CATALOGUE OF 1846.

Since the former Catalogue was printed, in 1831, 1,035 preparations have been added to the Pathologieal division of the Museum.

In the formation of the present Catalogue all the deseriptions, whether printed in the former one or added to it from year to year in manuseript, have been revised and reeonsidered; many of them have been extended; some have been correeted.

In all the instanees in whieh it was possible brief histories of the cases have been added to the deseriptions of the speeimens, together with referenees to more detailed aecounts of them reeorded in the Case-Books belonging to the Museum.

The general rules of deseription and the arrangement of the speeimens adopted by Mr. Abernethy and Mr. Stanley have been but little deviated from. The arrangement appears to be the most eonvenient for a Museum to whieh every year brings numerous additions, such as it would be diffieult to insert in appropriate plaees, in a more minute classifieation. But the advantages of an arrangement founded on principles of Pathology are sought to be attained by adding tables of referenee to the deseriptions of each series. By the help of these tables it will be easy both to find any specimen in the Museum, and to study the preparations in eaeh series in the order in whieh they may best serve for illustrations of the diseases of the part to which that series is devoted.

The following general Table of Referenees is inserted in order that certain specimens dispersed among the numerous divisions of the Museum

may be examined in the same order as if they had been arranged in a separate series as illustrations of General Pathology—an arrangement which could not have been adopted without detracting from the interest which those specimens contribute to the several series of illustrations of Special Pathology, in which they are now placed.

JAMES PAGET.

PREFACE

TO THE

APPENDIX OF THE PRECEDING CATALOGUES, PUBLISHED IN 1862.

SINCE the publication of the former Volumes of the Catalogue in 1846 and 1851, more than a thousand Preparations, and numerous Diagrams, Drawings, Models, and Microscopic Specimens have been added to the Museum. These are described in the following pages.

The present Volume corresponds to the two former ones, and its contents are arranged upon the same plan.

The First Part, which is a continuation of the First Volume, contains a description of the Specimens in Pathology. The Second Part, a continuation of the Second Volume, contains a description of the Specimens in Natural History, the Diagrams, Drawings, Models, and Microscopic Preparations.

In January, 1856, the late Dr. Farre presented to the Museum his valuable and interesting collection, including the original Preparations of Dr. Jones, from which are taken the Illustrations of his work on Hæmorrhage.

A description of these Specimens will be found at the end of the First Part of the Volume.

The earlier portions of this, the Third Volume of the Catalogue, have been written by Mr. Paget. Many of the Preparations, indeed the

majority of them, have been described by Mr. Callender, who has, moreover, prepared the Index and otherwise rendered important assistance. But for all errors which may appear I am responsible.

WM. S. SAVORY.

August, 1862.

ANATOMICAL AND PATHOLOGICAL MUSEUM OF SAINT BARTHOLOMEW'S HOSPITAL.

Extracts from the Reports of the Proceedings of General Courts and Committees of the Governors of the Hospital, respecting the Catalogues thereof.

THE earliest record of the existence of a Museum is in 1726, when a room was provided by the Governors as a "Repository for Anatomical or Chirurgical Preparations," which was placed under the charge of John Freke, Junior Assistant Surgeon to the Hospital. It was ordered* "that whatever preparation shall be given to the Repository, shall be numbered and the name of the person who gave it, and the history be entered in a Book to be kept at the Compting House." This Record Book is not extant.

The earliest specimens of which the origin is known, are, a Congenital Hernia, dissected by Percivall Pott, and a Specimen of Angular Curvature of the Spine, from "a patient who was under the care of Mr. Pott." The Specimen of Congenital Hernia was probably prepared before 1756, when Pott published his Essay on that affection. But whether these Specimens were preserved in the Museum of the Medical School, or formed part of a Private Collection made by Pott, and presented by him to Abernethy, it is impossible to say. The latter supposition is not improbable, as there are two crania affected with syphilis in the Museum, which were given by Pott to Abernethy.

At a House Committee, held on April 18th, 1821, Mr. Abernethy, in a series of representations urging the Governors to rebuild the Anatomical Theatre, offered to make over his valuable Collection of Specimens of "various Diseases and Injuries" to the Hospital, in trust for the use of the Medical School. This collection amounted "in number to several thousands."

* Extract from the Minutes of the Governors, June 23rd 1726.

At a Sub-Committee held on the 26th of May, 1828:—

* "Mr. Abernethy and Mr. Stanley having made a tender of the Preparations and all the other property in the Museum, to the Hospital, by the following document:—

"We, the undersigned, engage to give up the Preparations, and all the other property in the Museum, to the President, Treasurer, and Almoners of St. Bartholomew's Hospital, for the time being, for the use of the Medical School; and we also pledge ourselves carefully to preserve the same, to keep the Preparations in a state of good preservation, to supply new ones for those that decay, in a manner adequate to the instruction of students in all the facts of Anatomy usually exhibited in this manner, and to put up specimens of every interesting occurrence relative to disease and accident which may be met with in the practice of the Hospital, so long as we continue to teach Anatomy and Physiology in the school of the Hospital.

"We also engage not to make any separate collection, but to add all the Preparations and Drawings which we may procure to those in the Museum, in order to make that collection as ample and useful as possible.

"JOHN ABERNETHY.
"EDWARD STANLEY.

"St. Bartholomew's Hospital,
"*May* 3, 1828."

The Sub-Committee resolved as follows:—

"We recommend that the care of the said Museum be confided hereafter to the appointed teacher or teachers of Anatomy, who, from time to time, shall communicate to the Medical Committee whatever alterations or additions may take place in the Collection; that it be considered as the duty of such teacher or teachers to keep the Preparations in a good state of preservation, to supply new ones for those that decay, and in a manner adequate to the instruction of students in all the facts of Anatomy; and also to add new specimens of any interesting circumstances relative to diseases or injuries which may occur in the practice of the Hospital.

"That the teachers are also to be required not to make any separate collection, but to add all the Preparations and Drawings to the said Museum; that the medical officers of the Hospital be requested carefully to inspect the Museum, and annually report their observations to the Medical Committee, as well as to the House Committee previous to the Midsummer General Court.

The proceedings of this Sub-Committee were confirmed at the General Court of Governors, held July 23rd, 1828.

* Extracts from the Reports of the Proceedings of General Courts and Committees of the Governors of the Hospital, respecting the Anatomical Museum and the Catalogues thereof.

At a General Court held on the 22nd of July, 1829,

Mr. Stanley, on behalf of John Abernethy, Esq., and himself, attended and presented to this Court a Catalogue of the Preparations, &c., contained in the Museum of this Hospital, when it was resolved,

"That five hundred copies of the Catalogue be printed, under the direction of Mr. Stanley."

At a General Court held on the 27th of July, 1831,

Mr. Stanley attended and presented to this Court a printed Catalogue of the Preparations, &c., contained in the Museum of this Hospital, which was referred to the House Committee.

At a House Committee held on the 8th of July, 1845, the following Report was received from the Medical Officers respecting the Anatomical Museum :—

"The Medical Officers desire to draw the attention of the Committee to the present state of the Catalogues of the Anatomical Museum," . . . .

"And beg to submit to the Committee the propriety of causing a new Catalogue to be printed, in which the descriptions of all the specimens added to the Museum, since the printing of the Catalogue of 1831, should be included, and such alterations as are necessary in that Catalogue, should be made."

Whereupon it was resolved :—

"That a new Catologue of the Museum be printed, agreeably to the suggestion of the Medical Officers, under the direction of the Treasurer and Almoners."

Which Resolution was confirmed at the next following General Court of Governors.

At a Committee of the Treasurer and Almoners held on the 17th of September, 1846,

"Mr. Paget presented a copy of the new Catalogue of the Museum, printed under their direction: whereupon it was resolved that the Catalogue be forthwith published."

At a House Committee held on the 8th of July, 1851, a letter was read from Mr. Paget, requesting permission to commence the printing, and to make arrangements for the publication of the nearly completed Second Volume of the New Edition of the Catalogue of the Anatomical Museum.

Whereupon it was resolved:—

"That the best thanks of this Committee be presented to Mr. Paget for the preparation and efficient arrangement of the New Catalogue of the Museum;" and it was ordered that the Catalogue be printed accordingly.

At a House Committee held on the 15th of April, 1862, a letter was submitted from Mr. Savory, asking to be permitted to print in a single volume the descriptions in manuscript of many specimens (upwards of 1,300), which had been added to the Museum since the publication of the former Catalogues.

Resolved:—

"That the said manuscript be now printed as a Supplementary Volume."

At a Committee of the Treasurer and Almoners held on the 8th of April, 1880, a letter was read from Mr. Willett on behalf of the Medical Officers and Lecturers, asking the Governors to print a New Catalogue of the Hospital Museum, prepared by Mr. Eve, the Curator—a work which had become necessary for the efficient instruction of the students, and on account of the large addition of specimens, and the removal and re-arrangement of the specimens in the new Museum.

Resolved:—

"That Mr. Willett be requested to furnish a copy of the Catalogue as revised, and that the Clerk do then obtain from Messrs. Harrison and Sons an estimate of the cost of printing it."

At a Committee of the Treasurer and Almoners held on the 29th July, 1880—

Resolved:—

"That Messrs. Harrison and Sons be instructed to print 250 copies of the New Museum Catalogue in accordance with their estimate."

TABLE OF CONTENTS.

SERIES I.—DISEASES OF BONES.

SERIES XXX.—DISEASES AND INJURIES OF THE BRAIN AND ITS MEMBRANES.

SERIES LVI.—CASTS AND MODELS OF DISEASED AND INJURED PARTS.

SERIES LVII.—DRAWINGS OF DISEASED OR INJURED PARTS.

ERRATA.

Page 30, 26th line from bottom, *for* Lower Jaw, *read* Maxillæ.

,, 71, 20th line from top, *for* No. 11, *read* No. 12.

,, 216, 20th line from top, *for* No. 437, *read* No. 1437.

,, 372, the 12th line from top is to be transferred to p. 374, below "heading" on 5th line from top.

,, 563, 14th line from top, *for* No. 493, *read* 492.

SERIES I.

DISEASES OF BONES.

HYPERTROPHY.

1. A Skull-Cap, exhibiting great enlargement of all the bones in adaptation to the increased size of the brain from hydrocephalus. A. 181

The specimen was taken from a hydrocephalic dwarf, aged 28 years, who was idiotic and extremely rickety. He had never walked.

(In Case E.)

For other Specimens of Hydrocephalic Skull, see Nos. 2519 *to* 2521, *Series XXX, and* 3216, *Series L.*

ATROPHY (and Arrest of Development).

2. A Scapula and part of a Humerus. The arm had been amputated long before death; and through disuse, the bones are atrophied, but the humerus in a much greater degree than the scapula. The shaft of the humerus has less than half its natural diameter and tapers to a slender cone, at the end of which is some rough new bone. The marks of the attachments of muscles on it are nearly obliterated, and its texture is light and dry. The head of the humerus is flattened and almost entirely absorbed, and there is a corresponding diminution and change of form in the glenoid cavity. A. 157

(In Case E.)

3. Sections of the stump of a Humerus, exhibiting the results of Atrophy from long disuse after amputation. Its sawn end tapers to a small cone; the walls of the shaft are less than a line in thickness, light and dry; and nearly all the osseous part of its cancellous tissue being removed, the medullary tube appears, after maceration, like a smooth-walled cavity. I. 91

4. Pelvis and Lower Extremities of a young man. All the bones of the right side are atrophied. The several prominences on the right os innominatum are less marked, and its iliac fossa is more shallow, than the corresponding parts on the left side. The bones of the right thigh and leg are all shorter, less in circumference, softer, and lighter, than those of the left limb. From the hip-joint to the ankle there is a difference of nearly two inches in the length of the limbs. In compensation for this difference, the left foot is directed almost vertically, so that in the erect position of the body (in imitation of which the bones are arranged) the extremities of the toes of both limbs are at the same level. All the bones of the right foot are slender, small, and soft. The arch of the sole is much increased by the posterior part of the os calcis projecting more than usually downwards. The shaft of the left femur is enlarged by external deposit of new bone. The muscles of the right limb were small and in a state of fatty degeneration. A. 151

The right limb had probably been affected with Infantile Paralysis.
(In Case B.)

5. An Os Innominatum and part of a Femur. After amputation through the middle of its shaft, the stump of the femur has atrophied as in specimen No. 2, but its head and the acetabulum are unchanged. A. 158

(In Case E.)

6. Section of a Femur, the shaft of which was fractured about two inches below the lesser trochanter, after atrophy and softening of its texture. The fractured portions have united firmly and smoothly, but so that they form an acute angle. The posterior surface of the head of the femur is absorbed where, in the altered position of the lower extremity, it rested on the margin of the acetabulum. I. 92

The other half of this bone, and the opposite femur, which was similarly fractured and united, are preserved in Series III, No. 759. The patient, who was about fifty-six years old, had been bedridden for some years before the fractures occurred; they were both produced while he was being turned in bed.

Presented by William James Jones, Esq.

7. Sections of the upper part of a Femur from a very aged woman. Its texture is remarkably soft and light, and contains an abundance of fatty matter which, in maceration, has assumed the appearance of adipocire. The walls of the femur are at the thickest part not more than a line in thickness: the neck is shortened and is rather less oblique than is natural: the head is reduced in size, and irregularly flattened. I. 206

8. The lower extremity of an Atrophied Femur. Its compact walls are extremely thin; the anterior is bent, the posterior fractured. Some dense fibrous tissue stretches, like the string of a bow, from the extremity of the condyles to the shaft above the point of fracture. I. 303

From a child whose limb was amputated on account of long-standing disease of the knee-joint. A drawing of these parts will be found—No. 1.

9. Part of a Femur from an aged person. Its walls are thin and atrophied, from disuse of the limb after fracture through the neck of the femur. C. 125

(In Case E.)

10. Sections of a Femur in which there is an enlargement of the medullary cavity with thinning of the walls, and general lightness and dryness of texture. A. 92

(In Case E.)

11. Sections of the upper part of a Tibia, exhibiting the effects of extreme atrophy. The walls are so thin that they are in nearly every part transparent. The interior of the bone is filled with soft fat, intersected by few and very slender cancelli. The articular surface is ulcerated and partly covered with the fibrous tissue of adhesions. I. 263

12. A Section of the shaft and lower end of the same Tibia, partially macerated. It presents the same character of atrophy as the preceding specimen, and shows in a more marked manner the diminution of size which is associated with the thinning of the walls and the proportionate increase of fat. I. 264

The patient was a lad 15 years old, who had suffered for more than a year with disease of the knee-joint. The limb had been kept constantly at rest; but there was nothing in the history of the case to explain the remarkable atrophy not only of the tibia, but of the femur, fibula, and all the bones of the foot. The patient recovered after amputation of the limb.

13. The Bones of the left Leg and Foot of a young woman, aged 23, who had Infantile Paralysis of the left lower extremity when she was eighteen months old. She regained only very imperfect use of the limb. The tendo Achillis was divided three years before the leg was removed, but only slight improvement followed this and other treatment.

(In Case E.)

Complete fatty degeneration of all the muscles had taken place. See *Medical Times and Gazette*, April 4th, 1863.

For other Specimens of Atrophy, see Series II, No. 638, *and Series III, Nos.* 759 *and* 760, *Series V, Nos.* 1116, 1125, *and Series L, No.* 3217.

ABSORPTION FROM PRESSURE.

14. The Base of a Skull from an elderly woman who appeared to have been long in the habit of wearing a plug to close an opening in the palate. The opening, gradually enlarging, attained such a size that nothing remains of the palatine portions of the superior maxillary and palate bones; and the alveolar border of the jaw is reduced to a very thin plate, without any trace of the sockets of the teeth. The antrum is on both sides obliterated by the apposition of its walls, its inner wall having probably been pushed outwards as the plug was enlarged to fit the enlarging aperture in the palate. Nearly the whole of the vomer also has been absorbed, and the superior ethmoidal cells are laid open.

The plug is preserved: it is composed of a large circular cork, with tape wound round it, and measures an inch and three-quarters in diameter and an inch in depth. I. 232

The history of the patient is unknown. She was brought from a workhouse to the dissecting rooms, with the plug tightly and smoothly fitted in the roof of the mouth.

(In Case E.)

15. A Section of four Dorsal and Lumbar Vertebræ, the bodies of which have been deeply hollowed out by absorption consequent on the pressure of an aneurism of the aorta. The surface of bone formed part of the aneurismal sac, and layers of fibrin still adhere to it. It will be observed, that the intervertebral fibro-cartilages and contiguous edges of the bones are entire. I. 55

16. Portion of a Spine in which there are several excavations upon the front and sides of the bodies of the eleventh and twelfth dorsal, and first lumbar vertebræ. These excavated surfaces formed part of the boundaries of an aneurism of the aorta. Around the excavations there are some deposits of new bone. I. 156

17. Lower Dorsal and upper Lumbar Vertebræ, showing the eroding effects produced by the pressure of an aortic aneurism.

(In Case E.)

Presented by Oke Clarke, Esq.

INFLAMMATION OF BONE AND PERIOSTEUM AND ITS RESULTS.*

The following twelve preparations were obtained by a series of experiments performed by Mr. Stanley: see his work on Diseases of the Bones, Plates VIII and IX.

NECROSIS OF THE SUPERFICIAL LAYER.

18. Section of the Tibia of a Dog, in which necrosis has been produced in the outer layers of a small portion of its wall. The dead bone is distinguishable by its yellow colour. The living bone around it is increased in vascularity, and

* Syphilitic diseases of bone will be found in a separate section, p. 40.

in one situation the separation of the dead bone has been commenced by the formation of a groove between it and the living bone. I. 13

The death of the bone was produced by the perforation of its walls.

19. Tibia of a Dog, exhibiting a portion of its wall dead and in process of exfoliation. The dead bone is distinguishable from the living by its whiter colour; its separation is almost complete. Between the dead and the living bone a space intervenes, which is filled by soft and vascular substance. New bony matter is heaped upon the living bone around the dead bone, as well as in a thick layer on that side of the shaft which is opposite the seat of the necrosis. The periosteum has been in part detached from the tibia, to show that the new bone is entirely beneath this membrane, having been formed between it and the surface of the original wall of the bone, with which, however, it has completely coalesced. I. 7

The changes just described succeeded the cauterization of the external surface of the bone.

20. Tibia of a Dog, from which a portion of the wall, nearly similar to that which is shown in process of separation in the preceding specimen, has entirely exfoliated. The surface from which the dead bone has been separated is very vascular; and new bone is deposited in considerable quantity on the surface of the shaft around and opposite to it. I. 8

This preparation was made in the same manner as the preceding.

TOTAL NECROSIS.

21. Section of the Tibia of a Dog, in which the shaft of the bone, in its whole length and in nearly its whole thickness, died. The periosteum, which is thickened, separated from it. Upon the internal surface of the separated periosteum, the formation of new bone has taken place in small irregular deposits. The old bone, at its extremities, still retains connexion with the periosteum; hence it has received some of the fluid injected into the blood vessels. I. 10

The death of the bone was produced by the destruction of the medulla, as in No. 24.

22. Sections of the Tibia of a Dog, in which, as in the preceding, nearly the whole shaft of the bone has died. The dead bone is in process of separation, and new bone is formed around it in much larger quantity than in the preceding specimen. The periosteum which belonged to the old bone covers the new bone. I. 11

The death of the bone was produced by the destruction of the medulla, as in No. 24.

PARTIAL NECROSIS.

23. Section of the Tibia of a Dog, in which Necrosis was produced in a portion of the middle of its shaft. The dead bone, not yet separated from the living, is in part enclosed by new bone which has been formed around it. I. 14

The necrosis was produced by the destruction of the medulla.

24. Section of the Tibia of a Dog, in which a large portion of the cancellous tissue and of the wall of the shaft perished. The dead bone lay in a cavity with very vascular walls, and new bone was in process of formation around it. The periosteum which belonged to the old bone covers the new bone; but many fistulous holes extend through it into the cavity which contained the old bone. I. 9

The walls of the bone were perforated, and the medulla destroyed. The bone was laid bare for that purpose at the part where now the largest aperture into the cavity exists.

REPAIR AFTER NECROSIS.

25. Section of the Tibia of a Dog, exhibiting the process of reparation after a small portion of its anterior wall had been removed. The space left by the lost bone is partially filled by new matter, like granulations growing from the medulla, and new bone is formed on the surface of the shaft around it. I. 12

26. Fore Leg of a Dog, in which Necrosis of nearly the whole shaft of the Radius has been produced by destruction of the medulla. The dead shaft has been separated from the articular ends, and new bone is in progress of formation around its extremities. I. 17

27. Section of the Radius and Ulna of a Dog exhibiting Necrosis of a portion of the shaft of the former. The dead bone is completely separated, and new bone is abundantly formed around it. The cavity in which the dead bone is contained, is lined by a very thick and vascular membrane. I. 15

The necrosis was produced by the destruction of the medulla.

28. Sections of the Tibia of a Dog, exhibiting Necrosis of a small portion of the posterior wall, and deposit of new bone around the exfoliating portion. I. 16

29. The Tibia of a Dog, in which Necrosis of part of the shaft was produced by destruction of the medulla. The dead bone was separated by natural processes, and has been removed, with the exception of a small portion which is distinguishable in the centre of the new osseous cylinder. The new bone presents a very irregular external surface, and is firmly united to the articular ends of the old bone. I. 143

DIFFUSE (ACUTE) PERIOSTITIS (Acute Necrosis).

30. A Clavicle, with some of the adjacent tissues. The whole length of the clavicle, with the exception of its acromial end, and its sternal epiphysis, has undergone necrosis. It lies in a cavity which is lined by the separated periosteum, and which was filled with bloody pus. The tissues around this cavity are consolidated. I. 258

The patient, a delicate boy, 5 years old, fell on his shoulder. Several days afterwards, he complained of severe pain in and about the clavicle. The parts were swollen and so painful that a complete examination of them could not be made. The case was treated as one of fractured clavicle ; but in a few days, severe inflammation of the pericardium, heart, and pleuræ supervened, and the child died eleven days after receiving the injury.

Presented by Mr. Jonathan Hutchinson.

31. A Femur, showing the results of Diffuse Periostitis. The periosteum was completely separated from the shaft by a large collection of pus. I. 366

The specimen was taken from a child, aged 2½ years, who was admitted to the hospital with swelling of the thigh, supposed to be due to a fracture occasioned by rough usage while at play. The case was treated accordingly. The child died suddenly, immediately after being raised in bed, on the tenth day after admission to the hospital.

The autopsy revealed the condition of the femur described, general pyæmia, with pericardial effusion, to which death was probably due. The child had had the measles about a fortnight before the thigh became swollen.

The heart is preserved in Series VII, No. 1234.

See *Stanley Ward Book*, vol. iii, p. 388.

32. Acute Necrosis of the whole shaft of the Femur from a child. The periosteum has been separated from the shaft throughout the greater part of the inner aspect of the bone, and to a less extent behind and in front; to the outer surface it is but loosely attached : the separation extends to the lower epiphysis. The bare shaft is white and smooth ; it was surrounded by a large collection of fœtid pus.

Symptoms of the disease had existed about a month. The child died of pyæmia. I. 337

33. Sections of a Tibia, from a boy 18 years of age, exhibiting the effects of acute inflammation in its medullary tissue and periosteum. Lymph and pus are abundantly deposited in the cancellous tissue throughout its whole extent. Irregular ulcerations extend through the cancellous structure of the bone at each of its extremities, and have passed through the articular cartilages into the knee and ankle-joints; suppuration has also taken place between the epiphyses and the shaft. The periosteum, separated from the shaft of the bone in nearly its whole length, is very vascular, thick, pulpy, and velvet-like on its inner surface. I. 195

Other bones from the knee and ankle-joint of the same patient are in the next Series, No. 573.

34. Part of a Lower Extremity, showing Diffuse Periostitis of the Tibia and acute inflammation of the synovial membrane of the knee-joint. The thickened periosteum is detached from the anterior surface of the upper two-thirds of the shaft of the tibia, and the bone is white and dead; elsewhere the periosteum appears normal. The synovial membrane of the knee-joint is intensely injected, but the cartilages are not altered. In front a glass rod is passed through a communication, which existed between the under surface of the detached periosteum and the joint. The cavity of the synovial membrane was filled with pus, and the membrane had given way at its upper and outer part, allowing its contents to track along the surface of the femur.

From a boy, aged 15, who fell and struck his knee: eight days after he was admitted into the hospital with a collection of pus beneath the periosteum of the tibia, which was incised. Pyæmia developed itself, and he died with pericarditis, embolic abscesses in the lung, and thrombosis of a primary branch of the pulmonary artery.—See *Kenton Ward Book*, vol. vi, p. 146.

35. Section of the Tibia of a boy, in which there is Necrosis of the middle half of the shaft, with detachment of the soft parts from the whole circumference of the dead portion. The separation of the dead bone from the living has commenced, and is marked on the cut surface and exterior of the bone by ulcerated grooves. I. 199

It is probable from the history of the case that the necrosis commenced in inflammation of the periosteum, followed by extensive suppuration around the bone.

36. The other half of the Tibia last described. I. 200

37. The Tibia of the child from whom specimen (Series XI, No. 1712) was taken. The periosteum is separated from the whole surface of the shaft, which had probably perished.

INFLAMMATION OF THE PERIOSTEUM WITH FORMATION OF NEW BONE (Osteo-Plastic Periostitis).

38. Section of a Femur, on the surface of which numerous irregular plates of new bone are deposited. A. 26

(In Case E.)

39. A Femur enlarged by the deposit of new bone on its lower part immediately above the condyles. A. 18

(In Case E.)

40. A Tibia and Fibula with part of the Tarsus. The tibia and fibula are enlarged, and there are sharp-edged plates and processes of new bone upon their surfaces. The lower part of the interosseous ligament is ossified, and the os calcis, astragalus, and cuboides are all united by bone. These changes appear to have resulted from the irritation set up by caries of the tarsus. A. 25

(In Case E.)

41. Section of a Tibia exhibiting great increase of thickness in its walls, with

narrowing of the medullary tube, and consolidation of the medullary texture by thickening of the cancelli. The periosteum is detached, showing its thickened state upon the diseased part of the bone. I. 53

42. The other Section of the same Tibia. The enlargement is caused by the formation of a thick layer of new bone, like a node with a coarsely-nodulated surface, round the middle of the shaft. In the corresponding part of the medullary tissue, the osseous filaments and lamellæ are thickened and indurated, and have encroached on the medullary spaces till they are nearly obliterated. A. 19

(In Case E.)

43. Portion of a Fibula partially enlarged. A. 21

(In Case E.)

FORMATION OF NEW BONE RESULTING FROM THE IRRITATION OF ULCERS OF THE INTEGUMENTS, &c.

44. Lower two-thirds of a Tibia and Fibula from a man, who had long suffered from a chronic ulcer of the leg, on account of which the limb was amputated.

45. Lower halves of a Tibia and Fibula firmly united for two inches above the ankle-joint, by the growth of a large irregular mass of bone from their posterior and outer surfaces. There is a deep groove for the passage of the tendons of the peronæi muscles behind this growth. A. 47

A large ulcer had for many years existed on the outer and back part of the leg immediately above the ankle-joint.

(In Case E.)

46. A Tibia exhibiting an irregular thickening of its walls in the middle and anterior part of its shaft. An ulcer in the soft parts covering the thickened bone had existed many years, and on this account the limb was amputated. Two distinct changes may be here recognized; namely, thickening by separation of the layers of the wall, and deposit of new bone on its exterior. A. 40

(In Case E.)

47. Sections of a Tibia, exhibiting a circumscribed thickening and induration of its anterior wall; probably the effect of an ulcer of the investing soft parts. A. 23

(In Case E.)

47a. Section of a Tibia similarly diseased. A. 24

(In Case E.)

48. Lower half of a Tibia, of which the walls are thickened and increased in density. The chief increase is on the anterior aspect of the shaft, where, also, the surface of the new bone is peculiarly rough, coral-like, and spongy; characters indicative of new bone formed in circumstances of constant irritation. A. 48

The irritation arose in this case from an ulcer of the integuments, which had existed for a long time previous to the amputation of the limb.

(In Case E.)

49. Portion of a Tibia partially enlarged. On its front surface there is a circumscribed oval elevation of new bone with an abrupt margin, over which it is probable there was an ulcer of the soft parts. A. 22

(In Case E.)

50. A Tibia and Fibula, with large plates and processes of new bone upon their surfaces, and with ossification of the lower part of the interosseous ligament. A. 14

(In Case E.)

51. Portions of a Tibia and Fibula thickened in their walls, and with plates of new bone upon their external surfaces. A. 28

(In Case E.)

52. A Tibia and Fibula generally enlarged, with ossification of the interosseous membrane. There is a circumscribed oval elevation of new bone on the front and lower part of the tibia, over which it is probable there was an old ulcer of the soft parts of syphilitic origin. A. 15

(In Case E.)

53. Portion of a Tibia, on the external surface of which, above the malleolus, new bone has been formed on a circumscribed oval space. A part of the new bone has been destroyed by ulceration, which probably extended into it from an ulcer of the integuments. A. 50

(In Case E.)

54. Portion of a Tibia, exhibiting superficial ulceration, with a porous appearance of the surrounding bone: the result of disease like that shown in the preceding specimen. A. 76

(In Case E.)

OSTEO-MYELITIS AND ACUTE OSTITIS.

55. The greater portion of the Cannon Bone of a young Ass. Eighteen days before death a peg of bone was driven deeply into a hole bored into it. When removed and divided longitudinally the bone presented the signs of acute inflammation. The medullary membrane and the cancellous tissue were of a bright red colour; even the compact wall of the shaft appeared of a pale pinkish hue. The colours rapidly disappeared after immersion in strong spirit.

56. A portion of the opposite Cannon Bone of the same animal, into which a peg had been in like manner inserted eighteen days previously. Upon section it presented similar signs of acute inflammation, though in a less degree. The medullary membrane and cancellous tissue were not so intensely red.

57. The Tibia of the same animal, into which, eighteen days before death, two pegs had been inserted. Upon section it presented the signs of inflammation in a degree about equal to that of the previous specimen.

58. The other Tibia of the same animal, subjected to a similar experiment eighteen days before death. The bone was acutely inflamed throughout. Upon section the cancellous texture appeared of a vivid red colour. The medullary membrane in its middle third was in a sloughing condition.

59. Portions of a Humerus, Radius, and Ulna. The sections of the humerus exhibit thickening of the medullary membrane, which is, in some parts, upwards of a line in thickness, and presents an uneven velvet-like surface. A portion of cancellous tissue has separated after necrosis and lies loose in the medullary cavity. A piece of glass is passed through a long fistulous passage leading from the medullary cavity through the lower end of the humerus into the elbow-joint. The greater part of the articular cartilage is removed from the ends of the bones forming the elbow-joint; and the remains of the synovial membrane are thickened. I. 207

60. Sections of the Head and Shaft of a Femur, exhibiting suppuration in the

cancellous texture. The substance of the bone has undergone no further alteration than the exudation of pus into it, and an increase of its vascularity. I. 47

61. Part of a Tibia showing circumscribed Osteo-Myelitis, the situation of which is indicated by increased vascularity of the medulla and partial destruction of the cancellous tissue. The periosteum is not so strongly united to the bone as in the natural state; it has been partially reflected, to show its vascularity and softened texture, opposite to, and some distance above and below, the situation of the inflammation. There is a narrow ulcerated aperture in the integuments over the tibia leading to a slight superficial ulceration of its outer wall. I. 1

62. Section of an Os Calcis, in which the cancellous tissue is infiltrated with inflammatory products. The whole texture of the bone was soft, and could be easily cut with a knife. I. 217

From a man 70 years old, all the bones of whose tarsus and metatarsus were similarly diseased.

For another Specimen of Osteo-myelitis, see No. 33.

63. A Femur showing the results of Ostitis. The periosteum is thickened and for the most part adherent to the bone. There is a slight and irregular formation of sub-periosteal bone on the posterior surface of the shaft. The section of the bone shows both rarefaction and condensation, the latter preponderating. The rarefaction is confined to a thin layer, extending along the anterior surface of the shaft and to the neighbourhood of the junction of the epiphyses with the diaphysis. In the posterior two-thirds or more of the section the bone is dense; a few small cavities are seen in it, which were filled with caseous matter. In the cancellous tissue of the upper and lower extremities of the shaft are several cavities filled with a similar material. The head and neck of the femur had separated from the shaft, and were removed by operation. A tunnel, lined with granulations, passes through the upper extremity of the shaft; it opens externally on the surface of the great trochanter and communicated above with a large abscess cavity. The upper end of the shaft rested on the dorsum ilii. The knee-joint showed no evidence of inflammation except a few adhesions.

From a boy aged 11 years. He was attacked with symptoms of acute necrosis of the femur after getting wet. Two or three operations for the removal of sequestra were performed, during the last of which the head of the femur was removed. He died shortly after, two years and two months having elapsed since the onset of the disease.—See *Abernethy Ward Book*, vol. iv, p. 400.

63a. The Head and part of the Neck of a Femur. The head is separated from the neck at the epiphysial line: the neck is extensively ulcerated on the surface.

The parts were removed from a limb which had been amputated at the hip-joint on account of acute ostitis of the femur.

The patient, a boy aged 14, made a rapid recovery.

Presented by Mr. Rhind.

64. Section of the Lower End of a Femur. The medulla and cancellous tissue are infiltrated with the products of inflammation. The compact wall of the shaft is rarefied, especially just above the condyles. An irregular deposit of new bone has taken place upon its external surface. In some situations this deposit appeared to be connected only with the periosteum, and could be separated with it from the bone; in others, it appeared to arise from the bone itself. I. 52

From a boy 14 years old, who without any evident cause was attacked with severe pain in

the leg and thigh; the whole limb became œdematous, extensive suppuration ensued, and he died from hectic and exhaustion.

65. A Section of the Tibia from the same limb as the preceding specimen. The medulla and cancellous tissue are similarly affected. Several irregular thin pieces of the outer wall, and two small portions of the cancellous tissue of the upper part of the shaft, have perished. The surface of the wall around the dead portions of bone is extensively ulcerated, and around this ulcerated part new bone has been abundantly formed. I. 51

65a. The other Section of the same Tibia, showing superficial ulceration, necrosis, and a considerable deposit of new bone around the ulcerated surface. A. 57
(In Case E.)

66. A Section of a Tibia, exhibiting deposits of Lymph in the medullary tissue. Upon the external surface of the bone, in some situations, there is ulceration; in others, there are irregular deposits of osseous matter; and some small portions of its wall have suffered necrosis. I. 50

67. The Lower End of a Left Femur, showing the effects of Acute Ostitis. The lower epiphysis appears to have separated from the shaft, and the lower end of the latter projects forward, while the epiphysis is displaced backwards. About three-quarters of an inch of the lower extremity of the shaft is necrosed and infiltrated with pus. The posterior surface of the shaft, just above the point to which the epiphysis is adherent, is bare and dead; a bridge of newly-formed bone and ossifying connective tissue extends over it from the shaft above to the epiphysis. There is a thin irregular layer of new periosteal bone over the shaft. The periosteum is much thickened; the medulla is infiltrated with the products of inflammation, and the medullary canal is encroached upon by new bone.

The knee-joint contained pus. The synovial membrane was extremely thick and pulpy. The cartilage over the lower surface of both condyles was destroyed and the bone covered with granulations; over the remainder of the articular surface the cartilage was unevenly absorbed, as if chiselled off. The inflammation appears in this case to have attacked and been limited to the growing and recently formed bone at the extremity of the diaphysis.

From a boy, aged 11 years, who sprained his left knee. The next day his thigh was swollen and painful. On the third day after the fall he was admitted to the hospital with all the appearances of acute necrosis of the left thigh. An incision was made down to the periosteum and a few drops of pus let out. Pus subsequently formed in the knee-joint and was let out by an incision. The tibia became displaced backward and inverted; this displacement was noticed one month after the patient's admission. Amputation was performed through the middle of the thigh 2½ months after his admission to the hospital.—See *Abernethy Ward Book*, vol. v, p. 336.

68. The other Section of the preceding Specimen after maceration. The displacement of the epiphysis is more evident. The rarefaction of the compact and cancellous tissue of the lower end of the shaft is well marked.

69. A portion of the Lower Extremity of a Femur. The entire thickness of the shaft at the extremity of the diaphysis is necrosed and surrounded by soft granulations. The epiphysis is separated and displaced backwards (as in the preceding specimens), carrying with it the periosteum, which is thus detached from the posterior surface of the shaft, leaving the bone bare and apparently dead. A plate of new bone has been formed in this portion of the periosteum. The lower extremity of the shaft of the femur is rarefied, but there is an osseous deposit over a considerable extent of the surface. The knee-joint was disorganized by inflammation.

The specimen was removed by amputation from a child, aged 8 years, who, six weeks before, fell down and struck her knee. On admission to the hospital there was a large collection of pus at the lower extremity of the thigh, and the corresponding portion of the femur was bare. There was evidently a solution of continuity at the lower extremity of the bone, which

was at first supposed to be due to a fracture or traumatic separation of the epiphysis. Subsequently the knee-joint became inflamed.—See *Lawrence Ward Book*, vol. vi, p. 63.

70. Portions of the Lower End of the Right Femur removed by amputation from a man, aged 27 years, who had suffered from obscure disease of the knee for four years. The knee was much enlarged, and there was extreme unnatural lateral motion with a grating sensation, supposed to be in the joint itself.

After removal, the synovial membrane was found to be thickened and dilated, but the joint was otherwise sound and admitted of no undue motion. The grating and mobility were due to a separation of the condyles from the shaft of the femur and a hollowing out of the posterior surface of the bone. The distortion was due to the leg and condyles of the femur having been drawn upwards and backwards. The excavated surfaces of the bone were covered with a smooth hard layer of bone, except in places where crops of granulations had sprung up. In the soft parts around were traces of old purulent collections.

The shaft of the femur has been divided vertically; it is very dense, and covered with a thick layer of new bone.

(In Case E.)

71. The Upper Extremity of a child's Humerus, in which the epiphysis is separated from the shaft. The periosteum is separated from nearly the whole circumference of the upper extremity of the diaphysis, which is necrosed, and the surrounding tissues are thickened and infiltrated. I. 261

The signs of the disease were like those of acute suppurative inflammation of the shoulder-joint.

Presented by D. H. Gabb, Esq.

INFLAMMATION OF BONE WITH FORMATION OF NEW BONE AND THICKENING (Osteo-plastic Ostitis and Periostitis), AND OTHER PROCESSES ATTENDED WITH THE NEW FORMATION OF BONE.

72. Fragments of the upper part of a Skull increased to from half an inch to three-quarters of an inch in thickness, and consisting throughout of a very fine spongy or porous substance, which is dry, hard, and heavy, but friable and crumbling under the fingers, like hardened mortar. Into this substance both all the diploe and the tables of the skull are changed: in the inner table scarcely any trace, in the outer no trace, of compact substance remains. The grooves and apertures for blood-vessels in the inner table are very strongly marked. I. 36

73. Part of the vertex of a Skull, a Patella and Tibia affected with Ostitis Deformans (Paget). All the sutures of the skull are obliterated; the thickness is in every part greatly increased. The temporal ridge is very prominent. In the median vertical section the frontal bone measures 11 to 13 lines, the parietal 14 to 16, and the occipital 8 to 12, which is about four times the usual thickness of the normal bones.

The outer surface of the skull is finely porous and perforated by innumerable apertures for blood-vessels. The inner surface is little changed except by the enlargement of all channels and apertures for blood-vessels. The cut surface is for the most part dense and compact, but in some parts porous, cancellous, or cavernous; the spaces were filled with soft reddish substance like medulla. There are also larger cavities in which soft cancerous growths were lodged. The outer surface of the tibia is irregular, finely nodular, and perforated by numerous apertures for the transmission of blood-vessels. The compact substance is in every part greatly increased in thickness, but the medullary space is not much encroached upon: the cancellous tissue of the upper articular end has a normal aspect and arrangement.

The patella presents similar changes. Microscopic examination showed that

the number of Haversian systems were relatively diminished; the arrangement of the intervening space was most complex, and different from that of normal bone. The Haversian canals were much dilated, many of them confluent, but the vessels were usually small compared to the size of the canals.

These bones with the femur (No. 74) were taken from a gentleman aged 68 years. When 46 years old he began to be subject to aching pains in the legs and thighs, and after about a year noticed that the left shin was mis-shapen. Thirteen years later the left femur and tibia had a well-marked anterior curve, and the surface of the latter was nodular and uneven. His hats becoming too tight, he had to take successively larger sizes. The left femur and tibia became larger, heavier, and more curved. Very slowly those of the right limb were similarly affected. His skull continued gradually to enlarge. The spine became very slowly curved, and almost rigid. In height he sank about four inches. Shortly before his death, which took place from pleurisy, a malignant tumour appeared in the upper third of the left radius. On post mortem examination, a spindle-cell sarcoma was found to involve the left radius, and there were malignant deposits in the skull, pleura and anterior mediastinum.—See an account of the case by Sir J. Paget, Bart., in the *Medico-Chirurgical Transactions*, vol. lx.

Presented by Sir J. Paget, Bart.

(In Case E.)

74. A Section of the Femur taken from the same patient as the preceding specimen. The changes in the bones are there described.

In this specimen the periosteum is seen to be unchanged; the medulla is soft and yellowish red, and apparently healthy.

75. Portion of a Skull-Cap increased in thickness, and, except the surfaces of the tables, converted into a uniform, spongy, or porous tissue, apparently by a slighter degree of the same disease as is shown in No. 72. There is the cicatrix of an ulcer on the middle of the frontal bone. A. 33

(In Case E.)

76. Portions of a Skull-Cap, exhibiting obliteration of many parts of the diploe, with irregular thickening and porosity of its tables, and deepening of the arterial grooves upon the internal table. A. 29

(In Case E.)

77. A Skull-Cap. Both its tables are increased in thickness and density, and its diploe is nearly all consolidated. There are appearances of healed ulcers on the opposite surfaces of the left parietal bone; and the apertures for vessels penetrating the tables are very numerous. A. 30

(In Case E.)

78. Skull of a man, who, fifteen years before death, received a violent blow on the head, and from whom, two years before death, the right eye was extirpated. All the upper part of the skull is increased in thickness and density. Its inner surface, especially on the right side, is marked by an unusual number of grooves and small apertures for blood-vessels. The sutures are not obliterated. The right malar bone is somewhat depressed towards the orbit, and the external and inferior angle of the right orbit is not so deep as that of the left. The right angle of the jaw was superficially ulcerated by the growth of a large cancerous tumour of the adjacent lymphatic glands. A. 49

The eye which was extirpated is preserved in Series XXXIII, No. 2625, and a portion of the thickened dura mater, which covered the right hemisphere of the brain, in Series XXX, No. 2456.

(In Case E.)

79. A Skull-Cap, generally thickened and indurated, with circumscribed deposits of new bone on several parts of its internal surface. A. 31

(In Case E.)

80. A Skull-Cap, a considerable extent of the inner surface of which is thickened and rugged.

The thickening is greatest on the inner surface of the parietal bones, but is also considerable on the upper part of the frontal bone on either side of the middle line, and over the upper portion of the occipital bone. Symmetrical circular depressions about the size of a shilling may be observed over the coronal suture about one inch on either side of the middle line. The dura mater was normal.

From a child aged 7, who died of tubercular meningitis. The incisor teeth were typically pegged, but there were no other indications of congenital syphilis. A Drawing of the teeth is preserved.—See *Mary Ward Book*, 1878; *Post Mortem Book*, vol. vii, p. 206.
(In Case E.)

81. A Calvaria, showing patches of grooves scattered over the parietal and frontal bones, which corresponded with villous processes on the dura mater.

From a female child aged 6, who died of tabes mesenterica. The incisor teeth were notched, as in the preceding case. The cerebral surface of the dura mater and the brain were natural. A drawing of the incisor teeth is preserved.—See *Post Mortem Book*, vol. vii, p. 238.
(In Case E.)

82. A Skull-Cap exhibiting a great increase of thickness of the diploe, and of portions of the inner table, at its anterior part. The inner surface of this part has an irregular rocky appearance from the deposit of hard new bone. The outer surface is smooth. A. 45
(In Case E.)

83. Sections of the Skull of a Maniac with irregular, rocky, and nodulated thickening of the inner table. A. 81
(In Case E.)

84. Skull-Cap, taken from a subject in the dissecting-rooms. The internal surface of the frontal bone is tuberculated and rocky, and its walls are thickened. The bone is much increased in weight.
(In Case E.)

85. A Skull-Cap, exhibiting numerous small irregular portions of bone projecting from the internal surface of the frontal bone. The diploe in the situation of these bony projections is considerably thickened, and indurated: the inner table, also, in correspondence with the increase of the diploe, is carried inwards, narrowing at this part the capacity of the skull. A. 39
(In Case E.)

86. A similar Specimen.

From the Post Mortem Room. There was no evidence of syphilis.
(In Case E.)

87. A similar Specimen.
(In Case E.)

88. A Skull, exhibiting throughout its whole extent an increased thickness and density of both the outer and inner tables. The same change also affects the bones of the face but in a somewhat less degree. The cancellous tissue of the skull is very hard and close-textured. A. 11
(In Case E.)

89. A Skull-Cap of natural thickness, but with remarkably deep arterial grooves on its internal aspect. A. 32
(In Case E.)

90. Portion of a Parietal Bone, the tables of which are separated to the distance of half an inch; the place of the diploe being occupied by very hard and heavy

spongy bone. The disease occupied the greater part of the parietal bone, producing a considerable elevation of the outer table, but no depression of the inner table. I. 256

Presented by John Avery, Esq.

91. Portions of the right Clavicle of a man, aged 30 years.

The whole of the bone, with the exception of about an inch of its acromial extremity, was removed by operation on account of considerable enlargement of the sternal half, which had been in progress for three years. The section shows that the bone is enlarged and much condensed. Here and there throughout its substance are minute cavities filled with soft granulation tissue. I. 331

92. Sections of a Humerus. The middle of the shaft is unnaturally curved, and is enlarged, chiefly by the expansion of its walls. A small quantity of new bone is deposited on the surface of the enlarged part. A. 17

(In Case E.)

93. Sections of a Humerus, in which, though the shaft is scarcely enlarged, many parts of its cancellous tissue are consolidated. In the place of the medullary tube there remain only several small isolated cavities which were filled by marrow. Where the cancellous tissue is not quite consolidated, its osseous lamellæ and fibres are thickened, so that the spaces between them are much encroached upon. A. 155

From the same patient as the femur, No 244. He had long suffered from scrofulous inflammation of the elbow, and ulcers of the upper arm after the amputation of the thigh; but they had healed many years before death.

(In Case E.)

94. Sections of the Humerus, from a young person in whom there had been long standing disease in and around the elbow-joint. A very thick layer of new osseous substance has formed around the shaft, extending to the borders of its articular surface. This osseous substance presents a vascular cancellous texture, and is surrounded by a layer of compact substance which is covered by the periosteum of the original bone. I. 196

95. Sections of the Ulna from the same Elbow-Joint. The same changes have occurred here; the shaft of the ulna is surrounded by a very thick layer of cancellous osseous substance covered by a layer of compact bone and by the periosteum of the original bone. I. 197

96. Sections of the Radius from the same Elbow-Joint. This bone, also, has undergone the same changes as have occurred around the humerus and the ulna. I. 198

These specimens illustrate the mode of enlargement of the articular ends of bones in chronic joint-disease.

97. Sections of the lower part of a Femur, enlarged and having a cavity in its interior. The cancelli and wall of the bone surrounding this cavity exhibit a natural texture. Upon the outer surface of the bone, corresponding with the cavity in its interior, there is a considerable deposit of new bone, apparently the result of irritation of the periosteum. I. 162

It is not known what the cavity in the femur contained, nor under what circumstances it was formed.

98. Sections of a Femur, exhibiting an increased thickness and density of the walls of the upper half of its shaft. A. 120

(In Case E.)

99. A Femur, Tibia, and Fibula, the shafts of which are generally enlarged.

The enlargement is due to the thickening of their walls by separation of the lamellæ, and to the formation of new bone on their surfaces. In the femur, the osseous filaments and lamellæ of the cancellous tissue are thickened. A. 1

(In Case E.)

100. Section of a Tibia exhibiting various changes of structure the result of Ostitis. The cancellous tissue is in some places condensed, in others it was partially filled by inflammatory products. The bone is greatly enlarged, and several ulcerated passages lead into the medullary cavity. I. 131

(In Case E.)

101. Section of a Tibia, showing Sclerosis, the result of Chronic Ostitis. On the posterior surface, the compact wall of the shaft is much thickened; the medullary canal is obliterated. The anterior surface of the bone presents two deep excavations. These, the result of ulceration, are now partially filled in by dense scar tissue, which is continuous with the skin. The shaft of the bone is curved with the convexity forwards.

From a girl aged 18, whose leg was removed by amputation. Twelve years previously the leg was squeezed in a crowd. Three years later abscesses formed about the limb, from which pieces of bone were discharged at different periods. The leg grew larger, and two large ulcers formed on its anterior surface, which penetrated the bone.—See *Lucas Ward Book*, vol. ii, p. 319.

102. Sections of the Tibia of a lad about 18 years of age. The left tibia is nearly an inch longer than the right; in its increase of length it has become curved, its ends, confined by their attachments to the fibula, having been hindered from separating more widely. The left tibia is increased in thickness as well as in length, chiefly by the expansion of its walls. The front wall is, in parts, an inch thick and composed of nearly uniform cancellous tissue: it is also more lengthened than the other walls. A. 46

(In Case E.)

103. Two Tibiæ, the shafts of which are gently curved forwards and generally symmetrically enlarged. The chief increase is in the anterior wall, which is in some parts an inch thick, and of which the whole texture is heavy, dense, and hard. A. 3

A Drawing of one of these Tibiæ is preserved, No. 5 *b*.

(In Case F.)

104. A Tibia, the shaft of which is curved forwards and inwards, and enlarged in its upper half. On its anterior surface there are circumscribed deposits of new bone, such as are found under ulcers of the integuments. The curvature of the tibia is not like that which takes place in rickets, but like that in the two preceding specimens, which is due to the tibia becoming elongated at the same time that it enlarges, and to the separation of its ends from each other, as it elongates, being prevented by its connexion with the fibula. A. 42

(In Case F.)

105. A Tibia, the shaft of which is generally enlarged, and the surface roughened and porous from chronic ostitis and periostitis. A. 7

(In Case F.)

106. The Tibia of a young person, generally enlarged by the formation of new bone on its surface. A. 9

(In Case F.)

107. Section of a Tibia greatly enlarged and heavy. The section shows no distinction between the compact and cancellous tissue, but the osseous tissue is, for the most part, dense and in places finely porous.

From a man who had long suffered from inflammation of the tibia.

108. A Tibia and Fibula. The shaft of the tibia is generally enlarged by external deposits of new bone. The head of the fibula is united by bone to that of the tibia. A. 44

(In Case F.)

109. Sections of a Tibia and a Fibula. The shaft of the tibia is generally enlarged and hardened. Upon its external surface there are irregular deposits of bone, sharp-edged and overhanging. Internally it presents a nearly uniform, closely cancellated texture, in which there is hardly a distinction between the walls and the medullary cavity. Just above the ankle-joint, in the situation of the medullary canal, there is an irregular elongated cavity communicating externally by a small round aperture, or cloaca, through the walls. It is probable therefore that there was necrosis of a portion of cancellous tissue at this part. The fibula is thinly covered by new bone. A. 36

(In Case F.)

110. Sections of a Tibia and Fibula. Both bones are thickened, chiefly by expansion of their walls, and there is ossification of the interosseous ligament. A. 16

(In Case F.)

111. Portion of a Tibia exhibiting deep ulceration of its walls, with thickening and induration of the surrounding bone. A. 54

(In Case F.)

112. A Tibia generally enlarged. Three small ulcerated apertures through its walls above the malleolus make it probable that the enlargement was connected either with necrosis or with syphilitic ulceration. A. 12

(In Case F.)

113. A Great Toe with its Metatarsal Bone removed by operation. There is a broad flat growth of cancellous bone from the under part of the distal extremity of the metatarsal bone. I. 194

The patient was a man about 30 years old. In consequence of a laceration of the soft parts in the sole, there remained a cicatrix on the under and inner edge of the foot. The irritation in the surrounding parts, excited by the pressure on this cicatrix in progression, was the cause of the growth of bone.

114. Various Bones from Cows, on all of which there are external deposits of light, grey, porous, new bone. The deposits extend, in many cases, over the whole shaft. They are, for the most part, in thin layers, but are in some cases accumulated in thick ridges and knobs. A. 156

The cows from which they were taken were fed in meadows near some arsenic-works; and it is presumed that these changes of the bones, which were observed in many of the cows, were the results of the impregnation of the air, or of their food, with arsenic.

Presented by Dr. Roupell.

(In Case F.)

INFLAMMATION PRODUCING RAREFACTION OF BONES (Rarefying Ostitis).

115. Sections of the Bones of an Elbow-Joint. Their articular ends are enlarged and ulcerated. The enlargement of the bones, which is greatest on the ulna, depends chiefly upon a separation of the layers of their walls. Their whole texture is very light and brittle. I. 56

From a boy 10 years old, in whom the disease had existed three years. He recovered after amputation of the limb.

116. Portion of the Os Innominatum of a young person. The bone is increased in thickness by the separation of its layers and the expansion of the cancellous tissue. Its texture is very light and brittle. I. 138

117. Section of the articular ends of a Femur and Tibia, and of an Astragalus, from a boy whose limb was amputated. The bones are enlarged, chiefly by the expansion of the cancellous tissue. Some of the enlarged cells are filled by healthy marrow, others by semi-fluid jelly, and some by a substance presenting all the characters of healthy cartilage. Both the knee and ankle-joints are anchylosed by adhesion of the opposite surfaces of the synovial membrane, and in the ankle-joint there is also a partial osseous union. I. 173

118. The remaining portions of the bones last described. The removal of the soft matter from the interior of the bones by maceration displays the enlarged cancellous spaces, and unusually numerous thin osseous laminæ along the medullary tube.

On the card marked A is the other half of the section of the shaft of the Tibia, and on that marked B, are portions of necrosed bone which were removed by the patient himself from his tibia five years before the amputation of the limb. I. 174

(In Case E.)

119. Section of the lower extremity of a Femur. The cancellous tissue of the articular extremity is distinctly rarefied.

From a case of strumous disease of the knee-joint in a child.

119a. Sections of a Tibia, in which the osseous part of nearly all the cancellous tissue being absorbed, there is a wide cavity extending completely through the interior of the bone. The walls of the bone are a little thicker than natural: and their texture is light and porous; the cavity probably contained purulent matter. A. 91

(In Case F.)

See also Series V, No. 1066, and No. 138 in this Series.

INFLAMMATION OF BONE WITH CASEOUS DEGENERATION OF THE INFLAMMATORY PRODUCTS (Strumous Ostitis) AND TUBERCLE IN BONE.

120. Portions of a Sternum and Ribs. There is a large cavity in the sternum filled with caseous material. This cavity was closed in both behind and in front by a membrane, apparently the thickened periosteum, a part of which is now reflected. I. 77

121. Section of the Head, Neck, and upper part of the Shaft of the Femur of a young subject. The cells are filled throughout by caseous material. The articular cartilage is sound. I. 39

122. Upper extremity of a Femur, showing infiltration of the bone with caseous matter.

From the collection of J. R. Farre, M.D.

123. Sections of the articular ends of the Femur and Tibia of a young subject. The compact layer of the bones is thin and soft; the cancellous tissue is delicate and filled with caseous material. I. 38

124. The Bones of a Knee-Joint, exhibiting the results of Ostitis with caseous degeneration of the inflammatory products. In some situations there is ulceration of the exterior of the diseased bone. The epiphyses are separated from the shafts, and portions of the epiphysis of the femur are necrosed. The articular cartilage is in some parts absorbed. I. 43

125. The other portion of the Femur last described. I. 44

126. Sections of the lower end of the Tibia and Fibula of a child. The walls of the bones are thin and soft, and the cancellous tissue of the ossified portion of its epiphysis is filled with caseous material. I. 37

ABSCESS IN BONE.

127. A Sacrum, in the interior of which is a large cavity, which contained pus. The walls of the bone have been expanded, and large portions of them have been removed by ulceration. The cavity of the abscess opened widely into the spinal canal. I. 28

The patient was between 50 and 60 years old, and died of organic disease in the stomach. There was no symptom which led to a suspicion of disease of the sacrum.

128. A Section of the lower end of a Femur from a child, in which there is a circumscribed abscess. It is situated in the cancellous texture immediately above the epiphysis, through which a channel appears to have led into the joint. The internal surface of the cavity is smooth and lined throughout by membrane, a part of which is still seen. I. 70

129. Portion of a Tibia, with a circumscribed smooth-walled cavity in the cancellous texture of its head, which was filled with pus; it is lined by a soft vascular membrane, and opens by two apertures through the wall of the tibia. I. 103

130. The upper part of a Tibia, which is occupied by a large circumscribed Abscess, of an hour-glass shape, lined by a "pyogenic" membrane. It was removed by amputation through the knee-joint from a man, aged 30, who had suffered from intermittent attacks of inflammation and suppuration in the upper part of his leg for some years.

See also *Pathological Society's Transactions*, vol. xxv, p. 211.

131. The other half of the Specimen last described.

132. Sections of the lower part of a Tibia, in the articular end of which is a cavity, probably a chronic abscess, of the form and size of a hen's egg. This cavity is lined by a soft and vascular membrane, a line in thickness, and it contained a serous fluid. There is a small aperture in one side of the cavity, which penetrates the wall of the bone; but, with this exception, the bone around the cavity appears healthy, and the joint is not implicated. I. 82

INFLAMMATION WITH ULCERATION (CARIES).

133. A Skull-Cap, with superficial ulceration of both its tables. A. 71

(In Case F.)

134. Portions of a Skull-Cap, of which the outer table is tuberculated and irregularly ulcerated. The diploe and inner table are thickened and consolidated, and the inner table appears to have been very vascular. A. 60

These changes were the effects of external violence.

135. The lower ends of a Radius and Ulna, with the bones of the Carpus and Metacarpus, exhibiting extensive disease in and about the carpus, with necrosis of the lower end of the radius. A considerable portion of the end of the radius, already deeply ulcerated, is necrosed, and was in process of exfoliation. The cartilage between the ulna and the radius is completely destroyed. The ulna and the bones of the carpus have had their cartilaginous surfaces destroyed by ulceration, and anchylosis has taken place between them, both by adhesion of their surfaces and by thickening and consolidation of the surrounding parts. II. 13

136. The Bones of two Wrists, together with the lower ends of the Radii and Ulnæ and the Metacarpal Bones, exhibiting the effects of Scrofulous Ulceration. On the left side the carpal bones are nearly destroyed, and there are large deep cavities, bounded by soft, greasy, crumbling bone, in the

adjacent parts of the bones of the fore-arm and metacarpus: on the right side the caries is extensive, but superficial. I. 40

137. The upper part of a Femur, the surface of which is irregularly, and for the most part superficially, ulcerated. Small portions only of the external lamellæ remain, and these are in many parts covered by a thin layer of new bone. The epiphyses of the great trochanter and of the head of the bone have separated. I. 221

These changes were consequent on sloughing over the great trochanter, which ensued in a prolonged case of psoas abscess in a young subject.

138. Sections of the Femur of a young subject, in which there is a Carious Cavity in the cancellous texture just above the condyles. There are irregular ulcerated apertures in the walls of the bone through which the matter passed from the cancellous texture into the surrounding soft parts. For some distance beyond the seat of the disease, deposits of new bone have taken place upon the outer surface of the femur, and the layers of the wall are separated. The whole of the bone is light, dry, fragile, and white. I. 94

139. The Lower Extremity of a Femur, exhibiting the effects of Caries, with irregular deposits of bone around and over the ulcerated surface. The walls of the shaft are thickened and spongy, and the remaining cancellous tissue is consolidated, so that their respective textures can hardly be distinguished. I. 31

140. The lower end of a Femur. The whole of the exterior of the bone is roughened by the growth of irregular plates and pointed processes of osseous substance. A large canal formed by ulceration passes obliquely through the bone from before backwards, just above the condyles, and communicates widely with a cavity occupying nearly the whole of the interior of the internal condyle. Around the lower part of each condyle there is a broad rim of new bone. The space between the condyles on the anterior aspect of the femur is deeply ulcerated. I. 201

From a man 35 years old, who had had disease of the knee-joint for twenty-five years.

141. The lower end of a Femur and a Patella. There is a large carious cavity between the internal condyle and the shaft, in the situation of the epiphysial line.

From a boy, whose leg was amputated on account of prolonged suppuration deep in the thigh, with disorganisation of the knee-joint.

142. Portion of a Tibia in which a large portion of the middle of the shaft has been destroyed by ulceration and necrosis extending gradually through it. The remaining bone is light, brittle, and porous, and there is a deposit of new bone on its surface above and below the diseased part. I. 172

Removed by amputation from a middle-aged man: the disease was the consequence of external injury from a rope coiled round the leg.

Presented by Edgar Barker, Esq.

143. The inner Section of the lower end of a Tibia injected, showing increased vascularity and rarefaction, the result of Chronic Ostitis with Caries. The distinction between the compact and cancellous tissue is lost, and the bone is enlarged by expansion and by the deposit of new bone beneath the periosteum. Just above the internal malleolus there is a fistulous opening leading into a cavity in the bone, large enough to admit a walnut, which is filled by soft granulation tissue. Except a small fragment of necrosed cancellous tissue seen on the inner surface of the section, no dead bone was found. The cartilages of the ankle-joint were tough, fibrous, and undergoing absorption at the edges.

From a man aged 37. When a boy he had some disease about the lower end of the tibia, attended with the discharge of pieces of bone, which recurred some years after, again subsiding. Three weeks before his admission to the hospital the lower part of the leg became again swollen and painful. Some carious bone was gouged out of a cavity in the lower end of the tibia. No marked improvement taking place, amputation was performed a month later.—See *Darker Ward Book*, vol. vi, p. 166.

144. The other Section of the same bone macerated.

145. The inner Section of the lower end of a Tibia, an Astragalus and Os Calcis. There is a cavity in the lower end of the tibia, filled by soft granulation tissue, but still communicating with the surface by a sinus which opens above the internal malleolus. The astragalus is united to the tibia by a layer of fibrous tissue, which only covers a small extent of the articular surfaces; the cartilages are otherwise intact, but thinned at the edges. The joint had no communication with the cavity in the tibia, and did not contain pus.

From a girl, aged 14, who was admitted to the hospital with thickening of the tissues above the ankle and sinuses above the internal malleolus, leading into the tibia. The disease was supposed to have resulted from a sprained ankle four weeks previously. A sequestrum lying loose in a cavity in the lower end of the tibia was removed by operation. No great improvement being observed, amputation was performed three weeks later, under the impression that there was disease of the ankle-joint.—See *Sitwell Ward Book*, vol. vi, p. 30.

146. An Os Calcis, in the outer surface of which there is a Carious Cavity. There is a rough deposit of new bone over its entire surface. I. 312

147. An Os Calcis, the whole of the upper portion of which is Carious. An irregular deposit of new bone has taken place around the carious surface. I. 313

148. An Os Calcis. On its outer side a large Carious Cavity exists, which was occupied by an abscess.

The limb was removed in the upper third of the thigh from a young man on account of necrosis of the femur.

149. Caries of the Os Calcis.

The foot was removed from a man aged 21, who had been laid up for nearly two years with suppurating fistulæ connected with the diseased bone.—See *Darker Ward Book*, vol. iv, p. 157.

150. An Os Calcis, showing a Carious Cavity in its interior, which communicated with the surface by a fistulous opening on the outer side of the bone. I. 360

See *Lucas Ward Book*, vol. i, p. 387.

For Caries of the Articular Surfaces, see Series II, Nos. 596 *to* 620; *and for Caries of the Vertebræ, see Series V, Nos.* 1061, 1063 *to* 1070, *&c.*

NECROSIS.

NECROSIS OF THE ENTIRE SHAFT OR THE GREATER PORTION OF A BONE.

151. The left half of a Lower Jaw, which has suffered Acute Necrosis. The periosteum is almost entirely separated from the bone. The last molar tooth was found loose and its socket filled with pus. The articulation of the jaw was destroyed and the periosteum covering the squamous portion of the temporal bone was separated by pus.

From a man, aged 20, who four weeks before his death, was attacked with toothache,

followed by constitutional disturbance, and later by the formation of abscesses, about the left side of the face. He died of pyæmia.

The disease appears to have originated in inflammation about the fang of a tooth.—See *Kenton Ward Book*, vol. vi, p. 21.

152. A Lower Jaw, which, with the exception of the ascending rami, has undergone Necrosis. Considerable portions of the alveolar process have been destroyed by caries and necrosis.

From a boy, aged 3 years. A fortnight before his admission to the hospital, a swelling of the left side of the face was observed, which gradually increased. The mother stated that he had been playing with a cat, which had to be killed on account of a fœtid discharge from its nose. On admission there was a more or less circumscribed swelling of the alveolar process of the left side of his lower jaw, with some ulceration of its surface, having a phagedænic appearance, and fœtid discharge. The swelling gradually extended until the whole of the lower jaw was affected, and there was much brawny swelling of the face. Finally a slough appeared on the left cheek, which penetrated into the mouth. The child died exhausted seven weeks after the first appearance of the disease, believed to be Cancrum Oris.—See *Lucas Ward Book*, vol. vi, p. 396, and *Path. Soc. Trans.*, 1881.

153. A large portion of the Upper Jaw-bone of a child, exfoliated after Cancrum Oris. I. 227

154. A Lower Jaw, nearly the whole body of which suffered Necrosis after the administration of a few grains of calomel in a case of fever. The dead bone is in part separated, and a small quantity of new bone is deposited around it. I. 102

155. A Lower Jaw which was separated after Necrosis; from a female 20 years old. Previous to the necrosis the whole of the jaw had been covered by a formation of porous, hard, greyish, new bone; and this, which extends even over the condyles and coronoid processes, perished with the original substance of the jaw, and was exfoliated with it. I. 168

The disease commenced six years before the removal of the jaw. In the operation for removal the middle of the jaw was cut from the rest and extracted first: one lateral half was removed the next day; and the other, three weeks afterwards. The wound made in the operation, and the sinuses which had led to the diseased bone, healed quickly, and the patient recovered completely; regaining the power of mastication with those of the lower teeth which remained imbedded in the gum after the removal of the jaw.

Presented by J. G. Perry, Esq.; by whom a further account of the case is given in the *Medico-Chirurgical Transactions*, vol. xxi, p. 290.

156. A Clavicle in a state of Necrosis. I. 321

The two portions which are fastened together were separately removed, at an interval of a few months, from a boy aged 12. The death of the bone followed an attack of glanders, contracted from a diseased horse. Subsequently an entire new bone was gradually formed.

Presented by Mr. Barrow.

157. The lower half of a Humerus, which was amputated for Acute Necrosis. The outer surface of the bone is rough and "worm-eaten," especially in the proximity of a fracture, which passes obliquely through the middle of the specimen. The medullary canal contained pus.

From a man, aged 45 years, who was admitted to the hospital with a swelling around the lower half of the humerus, which had commenced five weeks previously. Spontaneous fracture of the bone occurred after his admission. The nature of the swelling and history of the case gave rise to the opinion that the humerus was the seat of a malignant tumour. The necrosis appeared to have been due to diffuse periostitis and osteo-myelitis.

The end of the humerus necrosed after amputation, necessitating re-amputation.—See *Darker Ward Book*, vol. v, p. 271.

158. Necrosis of the shaft of an Ulna, which was removed by operation, after its separation from the epiphyses. I. 309

From a child 16 weeks of age. At the eleventh week she had been vaccinated, and progressed without any untoward symptoms until the sixteenth, when she suffered from chicken pox, and subsequently from acute necrosis of the left fore-arm. After being under treatment for nineteen weeks the bone was removed, and the arm began to regain its natural appearance.

159. Part of the shaft of the Ulna of a child 4 years of age, which separated after necrosis. I. 180

The cause was unknown.

160. The terminal phalanx of a Thumb which exfoliated, almost entire, in a case of Whitlow. I. 228

161. A similar Specimen. I. 101

162. The Finger of an adult, in which there is Necrosis of the first phalanx in one half of its length including the distal articular end. The extent of the dead bone is marked by bristles introduced between it and the surrounding parts. The separation of the dead bone is complete, but no new bone has been formed in its place. I. 166

163. Bones of Fingers which separated by exfoliation. I. 66

164. The lower part of a Coccyx which necrosed and exfoliated after a fall on the buttocks. I. 229

The patient had imperfect power over the lower extremities from the time of the accident, and died after long-continued suffering with extensive abscesses in the perineum. The dead bone was removed after death.

Presented by Carston Holthouse, Esq.

165. Acute Necrosis of a large portion of the shaft of a Femur, removed by amputation from an infant 15 months old: spontaneous fracture had occurred a few days before. The shaft is separated from the lower epiphysis, but the knee-joint is not affected. The disease, which commenced spontaneously, had existed a few weeks. The case terminated fatally.

See *Lucas Ward Book*, vol. iii, p. 283.

166. Portion of the Femur of a child which separated in consequence of Necrosis. The separated portion includes the whole shaft and neck of the bone, with the exception of some small pieces of the outer layers of the shaft. I. 204

The recovery of the child, after the separation, was complete; the thigh was firm and not much shortened.

167. Necrosis of nearly the whole shaft of the Femur. The chief interest of this case lay in the fact that the necrosis was unaccompanied by suppuration. I. 378

The patient from whom the specimen was removed (by amputation at the hip-joint) was a man aged 20, who was quite well until about ten weeks before his admission into the hospital, when he began to suffer from deep-seated pain, soon followed by swelling of the left thigh. About six weeks after the beginning of his illness, the limb suddenly gave way as he was walking across a room, and he fell. On subsequent examination it was found that the extremity was much shortened, evidently in consequence of a fracture of the femur in its middle third.

On making a section of the limb after amputation no inflammation of the integuments or muscles, no abscess or sinus were found, and not a drop of pus was visible. The fracture, which was five or six weeks old at the time of the operation, is surrounded by fibrous tissue, in which new bone has been deposited, so as to form a somewhat bulky callus. This band of connection is, however, but feeble. The upper half of the femur at its posterior aspect has not perished, but is considerably thickened by the formation of new bone. The dead bone is not at all points loosened from its connections, but is still continuous with the cancellous tissue of the interior at the upper and lower extremities of the shaft: it is surrounded by a moderately thick sheath of hard new bone, which is continuous with the portion of the wall of the shaft that is not necrosed. There are one or two small openings in the sheath of new bone, which seemed, in the recent state, rather as if made accidentally after removal of the limb, than like *cloacæ*.

A Drawing of the specimen is preserved, No. 5c.

The other half of the specimen is in the Museum of the Royal College of Surgeons.
The case is described by Mr. W. Morrant Baker in the *Med. Chir. Trans.*, vol. lx, 1877.

168. Part of the Femur of a boy 13 years old. Almost all the lower half of the shaft has perished in its whole thickness, and was in process of separation. Deep grooves have been formed between it and the adjacent living bone, on all parts of which new bone has been deposited. A. 121

The disease commenced after a blow on the knee, five weeks before the amputation of the limb.
(In Case F.)

169. The left Tibia of a boy aged 8. Some weeks before death he received an injury to the limb, which was followed by acute necrosis of the shaft of the tibia. A layer of new bone extends from the lower epiphysis for some distance around the dead shaft of the bone.
Acute pericarditis, probably the result of pyæmia, terminated his life.

170. The shaft of a Tibia in a state of necrosis. I. 320

It was removed from a girl aged 14. She recovered from the operation. Nothing could be learned respecting her subsequent history.
Presented by J. Hales, Esq.

171. A Sequestrum, consisting of the whole shaft of the right Fibula, removed from a boy aged 7, the subject of infantile paralysis of both lower extremities. The inflammation causing the necrosis followed the friction of instruments, which had been used six months before his admission to the Hospital, with the object of supporting the paralysed limbs.

172. The greater part of the shaft of a young person's Fibula, which was attacked by Necrosis, without obvious cause. Complete repair took place. I. 158

173. An Os Calcis which has undergone necrosis.

174. Sections of a Cuneiform Bone necrosed and separated; the cancellous tissue is infiltrated with pus, and the articular surfaces are superficially ulcerated. I. 246

The disease was of long standing, and the soft parts about the tarsus were the seat of numerous abscesses and fistulous passages; but this bone alone was materially diseased. The patient, a young man, recovered after the amputation of the foot.

For other Specimens of Necrosis of the Entire Shaft of a Bone, see Nos. 30 *to* 37, 21, 22, 26, 244, 253, 255, 256.

OTHER SPECIMENS OF NECROSIS.

175. Portion of the left half of the Vertex of a Skull. A trephine opening into which the button has been inserted is seen anterior to the parietal eminence. A considerable portion of the parietal, with part of the squamous bone is necrosed. A distinct groove delineates the necrosed bone, both the inner and outer surfaces of which are rough and "worm-eaten."

From a girl aged 17, who fell out of a second floor window, and sustained, in addition to other injuries, a deep scalp wound which laid bare the left parietal bone. A "puffy" swelling appeared about the scalp wound with symptoms of meningitis, followed by those of compression. Trephining was performed about three weeks after her admission, and a small quantity of pus was let out from beneath the dura mater. Some improvement followed the operation, but she died comatose twenty-four days afterwards. A large abscess was found occupying the left hemisphere of the brain, and communicating with the lateral ventricle.—See *Stanley Ward Book*, vol. v, p. 402.

176. A large portion of a Skull which exfoliated after trephining. I. 79

177. A Skull from a Lunatic. The large portion of the parietal and occipital bones comprising about a third of the whole vault of the skull, as well as the small pieces which lie around it, were exfoliated in consequence of a burn. The

size of the aperture left in the upper and back part of the skull was, during the twelve years in which the man survived the injury, in a very slight degree diminished by the growth of bone from its margins. The exposed part of the dura mater was covered by a dense tissue like that of an ordinary cicatrix.

I. 100

The patient was 23 years old when, after many attempts to commit suicide, he laid his head on a fire and remained till the whole of the scalp was completely charred and a portion of the bone was calcined. The process of exfoliation of the bone occupied eighteen months; but a complete cicatrix formed. When he recovered, the patient, though still insane, did not again attempt to destroy himself.

(In Case E.)

178. A Skull-Cap, in which there has been Necrosis of a large portion of both tables of the frontal and right parietal bones. A groove, beginning in the outer table and gradually deepening, has been formed around the dead bone. Two applications of the trephine were made upon the dead bone, with the expectation of finding matter beneath it. A. 104

The necrosis was produced by a burn.

(In Case F.)

179. A Skull-Cap, exhibiting extensive Necrosis and Ulceration of the whole thickness of the parietal bones. A groove has been formed around the dead bone; the increased vascularity of the adjoining margin of the living bone is shown by the numerous minute apertures in it. As is usual, no new bone is formed on the outer table around the sequestrum; but a thin layer of new bone is formed on that portion of the inner table to the margin of which the groove of separation, commencing in the outer table and gradually deepening, has penetrated. A. 106

(In Case F.)

180. Portion of an Upper Jaw with two molar teeth, which separated by exfoliation. I. 145

From a boy aged 6 years. The necrosis was consequent on a severe blow upon the face.

181. The greater part of the superior Maxillary Bone of a child 5 years of age, separated by exfoliation. The cause of the necrosis was unknown.

I. 181

182. A portion of the Alveolar Process of the right Upper Jaw, corresponding to the incisors, canine and first bicuspid teeth, from a man aged 35 years. A severe chill was followed by a vesicular eruption on the surface corresponding to the distribution of the 2nd division of the 5th pair of nerves. The skin of the right cheek and upper lip was left pitted by the eruption. Soon after, this portion of bone exfoliated.

183. Portion of a Lower Jaw, including its angle and a great part of the ascending ramus, which separated by exfoliation. I. 167

From a young person in whom the necrosis had arisen without any evident cause.

Presented by J. G. Perry, Esq.

184. Portion of a Lower Jaw, containing a bicuspid and two molar teeth, separated by exfoliation. I. 146

From a boy aged 4 years. The necrosis occurred without any apparent cause. The loss of this portion of the jaw was completely repaired.

Presented by Alexander Anderson, Esq.

185. Portion of the Lower Jaw of a child, which separated by exfoliation. It contains two molar teeth of the temporary set, and the rudiments of three of the permanent set. I. 18

186. A portion of the Lower Jaw of a child, containing two teeth, which separated by exfoliation. I. 72

187. A Sternum, in which there is Necrosis of the central part of the bone extending through its whole thickness. The surfaces of the dead bone are ulcerated: those of the surrounding part of the sternum are covered by new bone. I. 63

188. Part of the upper third of the shaft of a Humerus, which had necrosed, and was removed by operation. I. 301

From a youth of a strumous constitution, who had suffered from rheumatism. The case is fully related in the *Hospital Reports*, vol. xiii, p. 591.

189. Section of a Femur exhibiting Necrosis of a portion of its walls near the trochanter major. The dead portion is separated, and there is a considerable quantity of new bone around it. In consequence of inflammation extending to the hip-joint, ulceration has taken place in the head and neck of the bone. A portion of the head of the bone remains, but it has been separated at the epiphysial line. I. 132

190. The lower portion of the right Femur and Patella from a man aged 23 years. The bone is much altered in form and structure, from the removal of old, and the formation of much new bone. On its posterior aspect lay obliquely the large fragment of dead bone, which is evidently a portion of the original outer wall of the femur. The patella is firmly anchylosed to the inner condyle. A. 175

Disease had existed for four years when the limb was amputated.
(In Case F.)

191. Portion of a Femur in which there has been Necrosis of a part of the shaft. The sequestrum has been removed: the walls around the cavity in which it lay are thick, hard, and heavy, though porous: and the adjacent cancellous tissue is nearly consolidated. A. 99
(In Case F.)

192. The bones of the Knee-Joint of a young person, in which there is Necrosis of part of the lower extremity of the shaft of the femur, with caries of the cancellous texture extending through the epiphysis to the articular surface. The epiphysis is separated form the diaphysis. B. 25
(In Case F.)

193. A Tibia, of which a large portion of the shaft is Necrosed and nearly separated. There is abundant formation of new bone around the dead bone. I. 69

194. A Tibia from a young subject, in which there has been Necrosis of nearly the whole Shaft. There are several distinct formations of new bone around the sequestrum. The lower articular surface is destroyed by ulceration. I. 65

Presented by A. Sicard, Esq.

195. The left Tibia of a boy aged 12 years. A large portion of the upper end of the shaft of the tibia has perished, and is encased by new bone. The fibula was considerably atrophied.
(In Case F.)

Presented by Mr. Barrow.

196. Section of a portion of a Tibia after compound fracture. The whole thickness of the wall at the extremity of the bone, and a part of its thickness for three inches up the anterior and inner aspect of the shaft, have perished, and are separated from the living tissue by a deep groove. The medullary tissue has retained its vitality, and is increased in vascularity. A layer of new bone, which in some parts is nearly half an inch thick, has formed on the surface of

the shaft around the dead portion, and is invested by the original periosteum. The new bone is soft, spongy, and vascular. A portion of the periosteum has been reflected from the upper part of the shaft, to exhibit the formation of new bone beneath it. I. 218

197. The other section of the Tibia and part of the Fibula from the same limb, as the preceding specimen, after maceration. An inch of the extremity of the fibula has perished. The surface of the adjacent part of the shaft is covered by new bone, which is especially abundant at the lower part, and has coalesced with the new bone on the corresponding part of the tibia. A part of the new bone has been separated from the shaft of the tibia, to show that it was all formed in the periosteum, or between it and the surface of the old bone, and that the latter is unaltered. I. 219

For other Specimens of Necrosis after Fracture see Series III, Nos. 866 *to* 875.

198. Necrosed bone removed from a cavity which had formed within an anchylosed ankle-joint after a severe compound fracture. II. 69

It had been a source of constant suffering for many years preceding its removal.

199. Portion of a Tibia which separated after necrosis. I. 67

200. Part of a Tibia, two portions of which, each including both compact and cancellous tissue, have perished and were in process of separation by grooves being formed around them. Previous to the necrosis these portions had been irregularly ulcerated on their surfaces and consolidated in their internal structure by thickening and union of their lamellæ. All the parts of the bone intervening between the necrosed portions are thickened and indurated. A. 122

(In Case F.)

The patient was a man about 50 years old. The disease had made slow progress for many years before the removal of the limb.

For other similar Specimens of Necrosis, Nos. 23, 27, 29, 67 *to* 71, 236, 237, 240, 241, 242, 248, 249, 250, 252, 254, 257, 260, 261, 262, 263 ; *also specimens of Necrosis of the Extremities of Stumps, Series XLIX, Nos.* 3200 *to* 3205, 3207, 3208.

NECROSIS OF THE SUPERFICIAL OR COMPACT LAYER.

201. A Skull-cap, showing Necrosis of a portion of the outer table of the frontal bone. There is a groove around the dead portion of bone. Ulceration with irregular superficial necrosis of the left parietal bone is also seen. A. 110

(In Case F.)

202. Portion of a Parietal Bone, which separated in consequence of Necrosis. I. 205

203. Portions of necrosed Bone removed from the margin of the foramen magnum; one portion included the posterior third of the foramen, the other contains the right posterior condyloid foramen.

Taken from a man, aged 27, who fell heavily on the back of his head six years before his admission to the hospital. The injury was followed by constant pain and stiffness about the back of the head and neck. Ten months later abscesses formed and discharged in the same region. When admitted to the hospital the right side of the tongue was exceedingly wasted and shrunken, and when protruded the organ was directed towards the right side. Its sensation was unimpaired ; the speech was thick. The pieces of necrosed bone preserved were removed by operation, and the patient recovered. In six months the right side of the tongue had nearly regained its normal size and power.—See *Clinical Society's Transactions*, vol. iii, p. 238.

204. Portion of a Femur, in which there has been Necrosis of the posterior wall of the lower part of the shaft. The dead bone was separated, but was held by a bridge of new bone formed across it. In the adjacent part of the shaft the walls are thickened, the cancellous tissue is nearly consolidated, and there is irregular ulceration above and upon the condyles. A. 96

(In Case F.)

205. The anterior surface of a Patella, which exfoliated after an injury to the front of the knee. I. 244

206. Section of the lower part of a Tibia. A portion of its outer wall is separated after necrosis. Externally, the sequestrum is completely covered in by a layer of new bone a quarter of an inch thick. Internally, the sequestrum is separated from the cancellous tissue by a layer of tough white tissue, half a line thick, between which and the dead bone bristles are placed. The tibia is generally increased by formation of new bone upon its surface. I. 266

The patient was a young labouring man, in whom ulcers of the integuments of the shin had existed for more than a year. They were attended with great pain, and he had frequent attacks of acute inflammation in the integuments and periosteum, disabling him from work, and materially affecting his general health. The existence of necrosis was only suspected. The dead bone could not be touched, being completely covered by new bone and periosteum. The patient recovered after amputation of the leg below the knee.

207. Portions of a Tibia which were separated by exfoliation. I. 161

From a girl 12 years old.

208. Portion of a Tibia exhibiting a superficial Necrosis of its walls. The formation of the groove between the dead and the living bone has commenced; and there is a deposit of new bone around the dead bone. I. 188

209. The other section of the Tibia shown in the preceding Specimen. A. 103

For other Specimens of Necrosis of the Superficial Layer, vide Nos. 18, 19, 20, 28, 238, 239, 251, 336.
(In Case F.)

NECROSIS OF CANCELLOUS TISSUE.

210. A Clavicle, in which a portion of the cancellous texture near its sternal end has suffered necrosis. The dead bone lies loose within a cavity, in which it is partially exposed by apertures formed in the surrounding walls of the bone. I. 193

211. Portion of a Radius, in which Necrosis in a portion of its lower end and articular surface has taken place. A groove between the dead and the living part of the bone indicates that a separation of the former was taking place. There is abundant deposit of new bone on the sound bone immediately around the diseased part. I. 73

212. Part of a Femur. In the lower section an oval cavity contains a portion of necrosed bone, having a rough, irregular surface, impacted above and below. The osseous tissue around the cavity is dense and extremely hard; the ordinary cancellous structure is scarcely recognizable, save just above the line of the epiphysis, between which and the articular cartilage there is a whitish, granular deposit. The cartilage retains a natural appearance. The entire inner condyle, and the shaft in the vicinity of the cavity, are considerably enlarged, but no new bone is deposited around the necrosed portion, nor is the periosteum materially thickened. I. 302

From a young man whose limb was amputated on account of the disease.

213. A Section of the lower end of a Femur. A small sequestrum lies loose in the lower end of the medullary canal, which is much enlarged. A large deposit of new bone surrounds the lower extremity of the shaft.
The knee-joint was not affected.

From a man aged 29, who was admitted into the hospital on account of disease of the bone of nearly ten years' duration. The thigh was amputated at his urgent request.—See *Kenton Ward Book*, vol. ii, p. 231.

214. A Femur, in which it is probable that there has been Necrosis of a portion of the inner wall and cancellous tissue of the lower part of the shaft. There is a large cavity in this part, and by its side many smaller ones, around which the wall of the bone is thickened, porous, covered by new bone, and penetrated by an oval aperture. A. 101

(In Case F.)

215. The corresponding ends of a Femur and Tibia. In a heavy fall, the femur was fractured about three inches above the condyles. The fragments are firmly united; but the upper one lies in front of the lower, overlapping it. In consequence of the same injury, necrosis ensued in a small portion of the tibia, including part of its articular surface. The sequestrum, when the limb was amputated many years after the injury, was found loose within a large cavity in the head of the tibia; this cavity opens through the anterior wall by the side of the tubercle of the tibia, and more widely into the knee-joint. The articular surfaces of both femur and tibia are ulcerated; and in the inner condyle of the femur, there is a deep cavity like that of an abscess, corresponding with the cavity in which the sequestrum lies in the head of the tibia. A. 114

(In Case F.)

Presented by Thomas Sympson, Esq.

216. Sections of the upper part of a Tibia, in which portions of the cancellous tissue have suffered necrosis and are partially separated. Lymph and pus are diffused upon and within the dead portions of bone; the medullary canal contains them alone, the rest of its osseous and fatty tissue being removed. The walls of the tibia are thickened and penetrated by several apertures into the medullary tube. The disease is limited to the shaft of the tibia. I. 268

From an old man in whom the disease had existed more than twenty years.

217. The head of a Tibia divided vertically. Nearly in its centre, as seen in the upper and lower sections, is an irregular cavity lined by a soft, pulpy membrane. In the upper half of the cavity there is a portion of necrosed bone, which, during life, was loose and surrounded by discoloured and fœtid pus. A tortuous sinus communicates with the surface of the limb.

The head of the tibia is enlarged in every direction, and its cancellous tissue is dense and indurated. I. 305

This preparation was obtained after amputation through the thigh. The operation had become necessary in consequence of the rapid failing of the health of the patient under the long-continued irritation resulting from the disease.

218. Sections of a Tibia, in which a portion of the cancellous tissue of the head died and was separated: it lay loose within a large cavity in the head of the bone, which is lined by soft vascular tissue, and the opposite walls of which are shown in the two sections. The periosteum, thickened and vascular, has been partially reflected, to show the rough external surface formed by the accumulation of new bone on the outer surface of the head of the tibia. I. 4

219. Sections of a Tibia in which there has been Necrosis of a portion of the cancellous texture near its head. A portion of the dead bone was probably removed through the smooth oval aperture in the adjacent thickened wall: the rest of it is not completely separated, but a deep groove bounds it. A. 102

(In Case F.)

220. A Foot which was removed by Symes' amputation. Suspended is the upper part of the astragalus, which had necrosed and separated from its connections: its head is still covered by cartilage.

From a boy aged 6, who had suffered from disease of the ankle-joint for ten months. Numerous discharging sinuses communicated with the joint. The disease, which probably commenced in the astragalus, was of idiopathic origin.—See *Harley Ward Book*, vol. ii, p. 185.

221. Sections of a Tibia, of which a portion of the cancellous tissue near its lower end has suffered Necrosis and been separated. The sequestrum lay loose in a cavity lined by thin organized membrane. In one of the sections the half of the sequestrum is retained in its place; in the other, it has been removed to expose the interior of the cavity. The walls of the bone around the cavity are slightly thickened, and there are two ulcerated apertures extending through them: but their texture, as well as that of the periosteum, is nearly healthy. There is also a wide ulcerated aperture through the articular surface of the bone, and nearly the whole of its cartilage is removed. I. 242

From a boy 7 years old, in whom the disease, arising from no evident cause, had existed for some years. Numerous abscesses about the ankle rendered amputation necessary.

Presented by Joseph Hodgson, Esq.

222. An Os Calcis. In its posterior third is a considerable cavity lined by a soft, and, when recent, extremely vascular membrane. This cavity communicated by means of a sinus with the sole, and with the inner side of the foot. It contained fœtid pus, and the mass of dead bone seen in one-half of the preparation. The bone thus situated was necrosed and separated, but, being impacted at the point where the sinus communicated with the cavity, there was no evidence, during life, of the completion of its isolation. The membranous lining is perforated at various points by spiculæ of bone, apparently growing from the adjacent osseous tissue, which is dense and indurated. I. 307

The man, aged 22 years, from whom this os calcis was obtained, had suffered for more than four years from symptoms indicative of necrosis of part of this bone. He also had a tubercular affection of the lungs, a combination of circumstances rendering it desirable to amputate the foot. The operation was attended with temporary benefit. Death was occasioned by the disease of the lungs nine months afterwards.

The case is recorded in the *Hospital Reports*, vol. xvi, p. 317.

223. Portion of a Tarsus, exhibiting Necrosis of the Os Calcis. The whole of the internal cancellous texture of the bone has perished, and was in process of separation from the thin osseous layer constituting its walls. The necrosis appears to have been the result of osteo-myelitis. I. 104

224. An Os Calcis, of which a portion has been exfoliated after Necrosis. There is anchylosis between the os calcis and os cuboides. I. 169

225. An Os Calcis, in which there was Necrosis of a portion of the cancellous tissue. After the separation of the sequestrum, abscesses formed in and around the bone, and there was abundant deposit of new bone upon its surface. Ulceration also extended through the superior articular surface of the os calcis; and anchylosis between it and the astragalus followed. I. 243

From a man 22 years old. The disease commenced shortly after a rusty nail had been driven into the heel, piercing the bone. The patient recovered after amputation of the foot.

226. A Great Toe with its Metatarsal Bone removed by operation. There has been necrosis of a portion of the interior of the metatarsal bone. The sequestrum lies within a cavity which is lined by soft and vascular granulations, and opens externally by fistulous apertures in the skin. The inflammation accompanying the processes consequent on the necrosis of the metatarsal bone has extended to the first joint of the toe, and completely destroyed the articular cartilages. I. 153

For other Specimens of Necrosis of Cancellous Tissue, see Nos. 59, 67 *to* 69, *and* 71, *and Series II, Nos.* 574, 575, 576.

NECROSIS, THE RESULT OF ULCERS OF THE INTEGUMENTS.

227. A Section of a Tibia with the surrounding soft parts injected. There is a chronic ulcer on the anterior surface of the leg. The skin around the ulcer is thin and adherent to the bone. The surface of the tibia is rough and thickened. At the base of the ulcer a considerable portion of black necrosed bone is exposed. On the surface of the section the necrosis is seen to extend through the whole thickness of the shaft, and a fracture passes through the necrosed bone, which is separated from the healthy bone by a distinct line of demarcation. The shaft of the tibia below the necrosed portion is sclerosed, and between the sclerosed and healthy bone there is a thin area of rarefied bone. The upper part of the shaft is condensed to a less degree.

From a woman, aged 48 years. When eight years old, she had necrosis of the tibia; a piece of necrosed bone several inches long was removed, and she recovered completely. Three months ago the scar broke down, and an ulcer formed, which exposed the bone. Fracture through the necrosed bone subsequently occurred and amputation below the knee was performed.

There was no evidence of constitutional or acquired syphilis.—See *Casualty Ward Book*, vol. iv, p. 25, and *President Ward Book*, vol. vi, p. 153.

228. A section of a Tibia exhibiting Necrosis of the whole thickness of the shaft beneath an ulcer of the integuments. Above the necrosed portion, the anterior surface of the shaft is exposed and carious. A portion of the posterior surface of the shaft is also necrosed, and a cavity exists here beneath the periosteum, which was filled with pus. Above and below the diseased part the bone is condensed. I. 99

229. A Tibia exhibiting Necrosis of a portion of its anterior wall. The dead bone, distinguished by its colour, is in process of separation from the living bone, a deep groove being formed between them. Its surface was in part removed by ulceration previous to its death. The walls of the bone, around the exfoliating portion, are thickened and of a porous texture. The necrosis was probably due to an ulcer of the integuments. I. 64

NECROSIS OF THE LOWER JAW FROM EXPOSURE TO THE FUMES OF PHOSPHORUS.

230. Superior Maxillæ and adjacent bones of the same patient from whom Specimen No. 232 was taken after death, which occurred six months subsequently to the removal of the lower jaw.

The following bones were denuded of periosteum, and dead:—

On the right side:—The whole of the upper maxilla, the malar, external and internal angular processes of the frontal, and that part of it in contact with the lachrymal and nasal bones, except at the base. All the internal pterygoid plate, and the front part of the external pterygoid plate of the sphenoid, also a narrow strip of the orbital plate of the greater wing adjacent to the malar; all the palate bone; the inferior spongy bone, and the back part of the middle one; the os planum of the ethmoid, which, however, was whiter than the other bones.

On the left side:—The whole of the upper maxilla with all the teeth, the orbital surface, the back part, however, being less stained; that part of the malar bone adjacent to the upper maxilla; all the palate bone, except the orbital process; the inferior spongy bone: the lachrymal, which was less stained above than below; the nasal bone, except at the base; the os planum of the ethmoid, which was whiter than the other bone; the vomer, except a strip in the middle third of the right side, which was still covered; below it was quite separated from the crest of the maxilla and the palate bones, and from the perpendicular plate of the ethmoid behind. In some parts, the surface of the bones has a worm-eaten appearance, and in others is coated with a rough deposit of new bone.

231. The greater portion of the two superior Maxillary Bones in a state of Necrosis, removed from a man aged 34. I. 322

It had completely separated, and was extracted without any difficulty or division of surrounding parts. The disease and death of the bone were the result of exposure to the fumes of phosphoric acid twelve weeks previously.

232. Lower Jaw of a lad aged 18, with two left molars, removed during life on account of phosphorus-necrosis. The jaw was divided a little to the right of the middle line, and each half was drawn out of the mouth without difficulty, and scarcely any hæmorrhage. The enamel is absent from the grinding surface of one of the two teeth, which appear porous. Some portions of the front surface of the jaw, especially of the right ramus, are coated with a pumice stone-like deposit.

This specimen was taken from the same patient as No. 230. The repaired bone is shown in No. 246.

233. An entire Lower Jaw which, with the exception of the left condyle, has undergone Necrosis. There is a considerable deposit of new bone about the left condyle. I. 338

From a man aged 40, who had worked in a lucifer match manufactory for twenty years. The jaw had been affected for nearly two years before its removal.

The bone was found on his death to be in great part reproduced. It is preserved in No. 245.

234. Necrosis of the whole Lower Jaw, exeepting the right condyle. I. 315

From a man aged 40, who had been for some time at work in a lucifer match manufactory.

235. Nearly the whole of the Lower Jaw in a state of Necrosis. I. 311

Removed from a man who had been for some time engaged in a lucifer match manufactory. He completely recovered from the operation.

SPECIMENS ILLUSTRATING THE PROCESS OF SEPARATION OF DEAD BONE.

236. Portion of a Tibia from a compound fracture, exhibiting the changes in the periosteum and bone preparatory to the exfoliation of the fractured extremity. The periosteum is thickened and appeared very vascular, and granulations have grown from its torn margin; a portion of it is detached and turned back, to show parts of the subjacent bone in a higher state of vascularity than is natural. Part of the extremity of the bone has acquired the peculiar white colour of dead bone. I. 20

237. Portion of a Tibia from a compound fracture, exhibiting a somewhat later stage in the process of exfoliation of the broken extremity of the bone. The dead bone is distinguishable from the living by its peculiar whiteness; and its separation has been begun by the formation of a superficial groove in the adjacent margins of the living bone. Granulations have arisen from the exposed medulla. I. 21

238. Section of a Tibia, exhibiting a part of the process of exfoliation after superficial Necrosis. The dead and exfoliating piece of bone is separated from the living bone in the upper half of its extent, and the space which has been here formed by the absorption of the surface of the living bone is occupied by soft vascular granulations. Beneath the lower part of the dead piece of bone there is an ulcerated groove, but no granulations. The granulations arising from the parts around the dead bone are large and spongy, and overlap its margins. I. 2

239. Sections of a Tibia. A portion of its anterior wall has perished, and is surrounded by new bone, from which it may be distinguished by its smoothness and peculiar whiteness. Between the new bone and the deeper portions of the dead bone there is a large quantity of soft vascular granulations. I. 6

240. The lower half of a Tibia, which suffered Necrosis after a compound fracture. The fractured ends lay at some distance from each other, and have been united by two lateral bridges of bone extended transversely between them. The necrosed end of the upper portion is almost exfoliated, and new bone is abundantly formed on the adjacent living bone. I. 88

241. Portion of a Tibia necrosed after a compound fracture, illustrating the process of exfoliation. The fractured end of the bone has perished. A deep and irregular groove has been formed around the limits of the dead bone, and a considerable deposit of osseous substance has taken place upon the contiguous living bone. I. 80

242. A similar Specimen. I. 81

243. Sections of a Tibia, of which nearly the whole length and thickness of the walls of the shaft perished, and were in process of separation from the cancellous and medullary texture, which has preserved its vitality and is in a nearly healthy condition. The groove formed between the dead and the living bone is filled with soft and very vascular granulations. On the internal surface of the periosteum, spongy and vascular new bone is formed in a nearly uniform layer, to supply the place of that which has perished. The inner surface of this new bone is covered by vascular granulations. I. 19

The walls of the bone perished after inflammation of the periosteum produced by the application of nitric acid to a sloughing ulcer in the front of the leg.

244. Parts of a Femur. A portion of the whole thickness of the shaft of the femur, five inches long, died and was separated. The dead bone is contained in a cavity, which is formed in part by new bone, and in part by the surrounding soft tissues. The formation of new bone has taken place chiefly at the remaining upper portion of the shaft, but has not extended the whole length of the femur; a considerable space remains at the lower part, where this new bone is connected with the condyles only by soft granulation tissue. The internal surface of the new bone exhibits great vascularity; the external surface is rough, irregular, and covered, not by well-formed periosteum, but by tough condensed cellular tissue, a portion of which has been turned back at the upper part. The surface of the lower end of the femur, from which the dead bone separated, is covered with granulations. The cartilage has been almost completely removed from the condyles, but the bone thus exposed is not ulcerated. I. 5

The patient was a lad 16 years old. General swelling of the thigh attended with severe pain had existed a year and a-half before his admission to the hospital. Abscesses formed, and finally amputation was performed through the trochanter major. A few days before the operation, the limb, by the complete separation of the sequestrum and the succeeding approximation of the ends of the femur, became one-third shorter than it had been. The rest of the patient's history is in the case of James Macdonnel, in a paper by Mr. Lawrence, in the *Medico-Chirurgical Transactions*, vol. vi, p. 174. London, 1815. The patient lived thirty years after the operation.

For other Specimens, see Nos. 18, 19, 175, 178, 196, 211, 226, 229, 334, 335, *&c.*

SPECIMENS ILLUSTRATING REPAIR, AND THE FORMATION OF NEW BONE AFTER NECROSIS.

245. Lower Jaw removed after death from the man from whom Specimen No. 233 was taken. The new jaw is formed chiefly of well developed bone; the intervals being filled up with fibrous tissue in various stages of ossification.

The case is described in the *Hospital Reports*, vol. i.

246. The new Lower Jaw which was formed after the removal of its pre-

decessor, No. 232. At the time of removal of the latter, there was no indication of new bone.

The patient had been employed in the match trade for several years; from 1868 to 1871 in carrying fresh matches, and from the latter date to the end of 1872 in preparing phosphorus-paste.

The disease seemed to begin about the middle of December, 1872. The lower jaw was removed in August, 1873. He died January 22nd, 1874.—See account of case by Mr. Savory, *Medico-Chirurgical Transactions*, vol. lvii, p. 187.

247. A Skull-Cap, in which a small circumscribed ulcer of the outer table of the frontal bone has healed. There are general thickening and induration of the tables and obliteration of the diploe. A. 72

(In Case F.)

248. Section of a Tibia from a boy. There has been Necrosis of a large portion of the whole thickness of the wall. The largest piece of the dead bone has been removed from the cavity in which it lay, and is preserved in the following preparation. The outer surface of this piece of dead bone, as well as of that which remains in this specimen, is quite smooth, the periosteum having separated without any portions of bone attached to it. On the inner surface of the separated periosteum, a layer of new bone, half an inch thick, and forming almost a complete new wall to the tibia, has been produced. The outer surface of this new bone is covered by the old periosteum, the continuity of which with that of the articular ends is shown; and the inner surface of the new bone is lined by a soft vascular membrane, which was in close contact with the outer surface of the dead bone. A portion of skin is left, which formed part of the boundaries of an external ulcer, exposing the dead bone on the front of the leg. I. 133

Presented by Sir James M'Gregor.

249. The dead and separated portion of the Tibia last described. I. 133A

250. Part of a Tibia. A large portion of the middle of the shaft of the tibia, including parts of its outer surface, and a much greater extent of its inner layers and cancellous tissue, has perished. A nearly complete wall of new bone, from half an inch to an inch thick, has been formed around the sequestrum; its external surface is irregular; the inner is lined by granulations. The new bone is of finely porous texture. I. 3

251. Sections of a Tibia, in which large portions of the wall are separated after necrosis. The separated portions include the outer and middle laminæ of the wall; they are enclosed by new periosteal bone, which closely simulates the compact layer of the shaft. I. 267

The patient was a feeble young woman 22 years old, in whom the necrosis had existed more than a year before she died with pulmonary disease. About six months before her death, the presence of necrosis being suspected, in consequence of the large quantity of pus discharged through two minute apertures in the front of the tibia, a portion of the bone was cut away with the trephine, and some sequestra were removed. The patient was for a time benefited by the operation; but the openings into the cavities containing the other sequestra remained, and were only narrowed by the growth of new bone around them. The case is related by Mr. Stanley in his *Treatise on Diseases of the Bones*, p. 138–9.

The specimen is represented in a drawing, No. 7.

252. A Tibia, the greater portion of the shaft of which has necrosed and separated. The old bone is replaced by a cylinder of new bone, having numerous cloacæ in its walls. A portion of the lower end of the old shaft, perforated and roughened by absorption, is still enclosed. I. 317

253. A Tibia in which there has been Necrosis of a large portion of the shaft. The dead bone remains enclosed within a case of new bone.

Presented by Gurney Turner, Esq.

254. A Tibia from a child. Several pieces of the shaft have perished. Some of them are exposed, some surrounded by new bone. There are many round apertures in the new bone, leading to the cavity in which the dead bone is contained. I. 58

255. The bones of the left Upper Extremity, from a man aged 22, showing the formation of new bone after Necrosis. Some portions of the humerus are in a state of necrosis, and are invested by new bone; others are in a state of caries. The whole of the ulna has apparently perished and is encased in new bone. At the elbow-joint the humerus is firmly united to the ulna by bone. The radius is but little affected. The disease had existed for nine years when the arm was successfully removed at the shoulder-joint.

(In Case F.)

Presented by Mr. Barrow.

256. Section of a Femur in which there has been Necrosis of nearly the whole length and thickness of the wall of the shaft. The dead bone is separated, and is completely enclosed in a case of new bone formed around it. There are several round and oval apertures leading through the new bone into the narrow space separating it from the surface of the sequestrum. A. 95

A Drawing is preserved, No. 5*f*.

(In Case F.)

257. A Tibia, in which there has been Necrosis of a portion of the shaft and of the cancellous tissue of its lower end. New bone has been formed abundantly about the seat of the necrosis. The lower articular surface of the tibia is nearly all destroyed by ulceration. A. 100

(In Case F.)

In the following specimens the formation of new bone is excessive, probably owing to irritation from long retention of the sequestra.

258. Sections of a Femur, in which a portion of the whole circumference of the compact wall, six inches long, has perished, and has been separated from the surrounding bone. New bone has been abundantly formed around the sequestrum. There is not in this new bone any aperture, or cloaca, leading into the narrow space around the sequestrum. The tissue of the new bone is compact and heavy, and its surface hard and nearly smooth. It will be observed, also, that the medullary tissue is entire within the perished part of the bone, although its texture is nearly consolidated. A. 118

(In Case E.)

259. Sections of a Tibia, which is presumed to have belonged to the same person as the femur last described, but from the opposite limb. It is diseased in exactly the same manner. A sequestrum of a large portion of the compact wall is completely enclosed within the thick and hard layer of new bone formed on and united with the remaining portions of the wall. The exterior of this new bone is even smoother than that last described, and there is no aperture leading through it to the cavity containing the sequestrum. The medullary tissue is entire, but partially consolidated. A. 119

Drawings of this and the preceding specimen are preserved, Nos. 5*d*, 5*e*.

(In Case E.)

260. A Tibia, part of the shaft of which has suffered Necrosis. The bone is much enlarged, and is porous, and rugged from chronic ostitis and the formation of new bone on its surface. I. 57

261. Part of a Tibia in which there has been Necrosis of a portion of the shaft, and an abundant formation of new bone on all the adjacent part. The dead bone is completely separated, and lies loose in the cavity surrounded by the new

bone, but is too large to be removed through any of the apertures, or cloacæ, in the new bone. A. 94

(In Case F.)

262. A Tibia, in which there has been Necrosis of a portion of the wall and cancellous tissue of the upper half of the shaft. The new bone formed around the sequestrum is thick, hard, and very heavy, and there are many apertures leading through it into the cavity in which the sequestrum lies. A. 97

(In Case F.)

263. A Tibia and Fibula. There has been Necrosis of portions of the whole length of the compact layer of the tibia. The remaining portions with the new bone formed on them are thickened, enlarged, and very heavy. There is extensive ossification of the interosseous ligament. A. 98

(In Case F.)

For other Specimens, see Nos. 19, 21, 22, 24 to 29, 243, 336, 342, 343.

ABSENCE OF FORMATION OF NEW BONE AFTER NECROSIS.

264. A Tibia, from which a portion of the shaft, nearly four inches in length, and including both the walls and the medullary tube, separated after Necrosis. The remaining portions of the shaft are connected by a thick band of tough ligamentous tissue, attached to their gradually attenuated ends. They are also soft, light, and smooth on their surface, as if extremely atrophied. Ligamentous union of the tibia and. astragalus appeared to have existed. The fibula is healthy. I. 262

From a girl in whom the disease had long existed. The leg could not be used in walking. The absence of any formation of new bone was probably due to destruction of the periosteum.

Presented by Mr. Charles L. Parker.

ARRESTED GROWTH FROM NECROSIS.

265. Two Femora from the same person. There has been Necrosis in the lower part of the shaft of one of these bones. The dead bone has been completely separated, and new bone is formed around the cavity in which it lay. The femur which was thus diseased is shortened to the extent of about four inches, and there is a peculiar flattening of the condyles, the consequence, probably, of the knee-joint having been immovably fixed in the position of extension. A. 116

(In Case F.)

The arrest of growth was no doubt due to necrosis of the extremity of the diaphysis and intermediary cartilage.

For other Specimens of Necrosis in a similar position, see Nos. 67, 68, 69, 70.

RICKETS.

266. A Rickety Skull-Cap. The anterior fontanelle remains widely open, and the edges of the frontal bone around it are thickened.

(In Case F.)

267. A Skull-Cap from a Rickety Child, aged 1 year and 5 months. The anterior fontanelle is very large, and the upper part of the frontal suture is not united. The parietal eminences are unusually well marked.

See *Post Mortem Book*, vol. viii, p. 158.

(In Case F.)

268. An extremely thin Occipital Bone, from the body of a very markedly Rickety Child, aged three months, who died of laryngismus. I. 346

269. A Skull-Cap, the bones of which are extremely thin. On the surface of the right parietal bone close to the lambdoid suture there is a small depression, at the bottom of which is a minute opening (craniotabes).

From a rickety child, aged 8 months, who was brought into the hospital dead.—See *Post Mortem Book*, vol. viii, p. 40.

270. The extremities of the Ribs and Costal Cartilages from the left side of a Rickety Child, aged $2\frac{1}{2}$. The ends of the ribs at the junction with the cartilages present a sudden, bead-like enlargement; the prominence is much greater on the posterior than on the anterior aspect.

271. Section of the First Rib, taken from the same subject as the preceding specimen. The enlargement is seen to be confined to the rib, the costal cartilage at the junction with that bone retaining nearly its normal size. The bone forming the enlargement is soft.

272. The Skeleton of an adult woman, showing, in a remarkable degree, many of the deformities consequent on Rickets. The dorsal region of the spine is strongly curved to the right side, and the lumbar region to the left; but the curve to the right predominates, so that the right ribs project an inch beyond the great trochanter, the chest thus overhanging the extremities. Together with the lateral curve of the spine, there is malposition of the bodies of the several vertebræ; they are all turned round, so that their front surfaces look outwards in the direction of the lateral curve in which they are included.

The right side of the chest is encroached upon by the dorsal curvature of the spine. The angles of the right ribs are very acute, their bodies strongly curved; the right intercostal spaces are very narrow. The angles of the left ribs are very obtuse, the ribs long and comparatively little curved, but directed downwards, so that the cartilages of the false ribs are nearly on a level with the crest of the left ilium, and their bodies nearly in contact with the lower dorsal vertebræ at the beginning of the second, or left, curvature of the spine. The general position of the chest is thus very oblique; what should be its vertical axis is directed from above downwards, from before backwards, and from right to left.

The pelvis is light and all its bones are thin. It is obliquely placed, the crest of the left ilium being higher than that of the right, and its ala further back and more concave. The left side of the sacrum being narrower than the right, and the symphysis pubis in the middle line, the left side of the pelvis and of its upper aperture are consequently less capacious than the right. The rami of the ischia curve outwards, and the lower aperture of the pelvis, though misshapen, does not appear unnaturally small.

The scapulæ and clavicles are slender and well-formed. The humeri are short and proportionately thick; the upper halves of their shafts present each a slight double curvature. The radii and ulnæ are also short and slightly curved; in comparison with the humeri they are slender. The bones of the wrists and hands are well formed.

The femora are both curved, and very short; they are of equal length, but the left is slender, while the right is of full thickness. In adaptation to the oblique position of the pelvis (the right acetabulum being nearly an inch lower than the left, and half an inch more forward), the right femur is much more strongly curved than the left; and the right is curved outwards, while the left is curved forwards. By this adaptation the obliquities in the upper part of the skeleton are nearly compensated; so that the knee-joints are at the same level;

neither of them is advanced before the other; and, except that the articular surface of the right is more oblique than that of the left, they are symmetrical. The tibiæ and fibulæ are strongly but similarly curved forwards and inwards, so that the shafts of the tibiæ nearly touch. The lateral axes of the ankle-joints are directed from without inwards, and from above downwards; and the internal malleoli are far within the tarsi and on a level with the lower margins of the astragali. The feet are in a corresponding degree splayed out, and their soles are nearly flat. A. 148

(In Case B.)

273. The Spine, Pelvis, and Lower Limbs of a woman, aged about 30, deformed by Rickets. The spine exhibits three lateral curvatures. The lumbar vertebræ, inclining strongly to the left, are also twisted on their vertical axis so that the left transverse processes project forwards. The lower dorsal vertebræ, inclining to the right, compensate for the preceding changes by having their right transverse processes directed forwards. The upper dorsal and the cervical vertebræ tend to the right, and their transverse processes incline to the same directions as those of the lumbar, viz., the left forwards and the right backwards. From the manner in which the weight of the trunk has been transmitted to the pelvis, the sacrum has become nearly horizontal. The cavity of the pelvis is capacious; the ilia are everted; and the angle of the symphysis pubis is rather more acute than is natural. The femora are short and strongly curved, with their convexities directed forwards; and their lower articular ends appear very broad and flat. The tibiæ and fibulæ are also curved with their convexities directed forwards and inwards. A. 14

(In Case B.)

274. The Pelvis and Lower Extremities of a middle-aged woman who had suffered from Rickets. The bones are all strong, thick, and heavy, and not much curved. They are all short, and the shaft of the left femur is two inches and a half shorter than that of the right. The necks of the femora are horizontal, and their lower articular surfaces, especially that of the left femur, appear, as they do also in many preceding specimens, broad and flat. A. 149

(In Case B.)

275. The Pelvis and Lower Extremities of a middle-aged woman who had suffered from Rickets. The cavity of the pelvis is contracted, especially on the left side, by the pressing-in of the acetabulum: but the lower aperture of the pelvis is wide, the rami of the ischia being bent outwards and their tuberosities divergent. The necks of the femora are less oblique than usual; their shafts, as well as those of the tibiæ and fibulæ, are considerably curved forwards and inwards. The shafts of the tibiæ and fibulæ are broad and flat. The feet are so much turned inwards that the great toes are in contact. A. 150

(In Case B.)

276. A Pelvis, showing Rickety Deformity. The cavity of the brim is flattened antero-posteriorly by the projection forwards of the sacrum. The antero-posterior diameter is $1\frac{7}{8}$ inches, the oblique $4\frac{1}{2}$ inches; at the outlet the antero-posterior diameter is $3\frac{3}{8}$ inches, the inter-spinous 4 inches.

From a woman on whom Cæsarian section was performed.
(In Case E.)

277. An ill-developed, contracted Pelvis, showing Rickety Deformity. The contraction is chiefly in the antero-posterior diameter of the brim, which measures only $1\frac{1}{2}$ inches. The sacrum is narrow and straight.

The specimen was taken from a woman who died after the performance of Cæsarian section.—See *Martha Ward Book*, vol. vi, p. 95.
(In Case E.)

278. A slightly deformed female Pelvis.
(In Case E.)

279. A Pelvis and Femora, exhibiting extreme Rickety Deformity, from a woman on whom Cæsarian section was performed. The antero-posterior diameter at the brim of the pelvis is only $1\frac{3}{8}$ inches. The femora are curved laterally, the greatest curvature being just below the trochanters; the necks are short and horizontal, and, owing to the shallowness, and displacement from pressure inwards of the acetabula, the heads of the femora project prominently forwards. The condyles are distorted and flattened out. A. 164

The case is fully described in the *Lancet*, February 6, 1847.
(In Case E.)

280. A Female Pelvis, the cavity of which is altered in its form and direction, so that the symphysis pubis is directly opposite the left sacro-iliac symphysis. The change is presumed to be the effect of Rickets. There was a slight lateral curve of the spine. A. 145
(In Case E.)

281. Sections of the Femur and Tibia of a Rickety Child. The bones which had become curved through a want of their natural hardness, have recovered their osseous texture and their inflexibility, but the curvature remains. In the femur, the walls of the bone in the middle and along the interior curve of the shaft have acquired a greater thickness than elsewhere. The tibia in the situation of the chief curvature is solid, and flattened from side to side. I. 35

282. Section (cut with a knife) of the Femur of a Rickety Child, curved in consequence of the want of its natural hardness. The shaft, instead of the normal division into solid walls and medullary cavity, consists throughout of cartilaginous and gelatinous substances intermixed and disposed in cells. It is observable, that a greater quantity of the cartilaginous substance exists in the middle of the shaft and towards the interior curve than at any other part. The articular ends of the bone are in a natural state. I. 34

The two preceding specimens are described by Mr. Stanley in the *Medico-Chirurgical Transactions*, vol. vii, p. 404, 1816.

283. A Femur, Tibia, and Fibula, from a child. They are all considerably curved from rickets, but have regained their natural firmness. There is a slight indentation with a circular thickening of bone, on the anterior surface of the lower extremity of the femur, which marks the situation of what appears to have been a united fracture. A. 138
(In Case F.)

284. A Femur, Tibia, and Fibula, from an adult. They are considerably curved, but their texture is as hard and heavy as in health. The femur is curved in an arch with its convexity directed forwards; the middle of its shaft is flattened at the sides, and the linea aspera in the same part is very prominent, its edge forming a straight line representing the chord of the arc formed by the most curved part of the shaft. The tibia and fibula are curved inwards, and in the middle of their shafts present an antero-posterior flattening greater than the lateral flattening of the shaft of the femur. A. 139
(In Case F.)

285. Portion of the Femur of an adult, very strongly curved in its upper third. The curved part of the shaft is so flattened that its anterior surface forms a narrow prominent ridge. A short sharp process of bone has grown from the

trochanter minor. The concavity of the curve presents a buttress of hard compact bone. The neck of the femur is short and abnormally horizontal. A. 140
(In Case F.)

286. The upper part of two Femora. In the softened condition of the bone during rickets, the head of each femur descended below the level of the upper end of the trochanter major. There is no shortening of the neck of the bone, but it is slender, and forms scarcely more than a right angle with the shaft. A. 141
(In Case F.)

286a. Sections of two Femora, deformed like those last described. A. 142
(In Case F.)

287. Section of a Rickety Femur of an adult. The shaft is greatly curved and laterally flattened; and the section shows that, as usual, the walls of the bone are much thicker on the concave than on the convex side of the curve. A. 143
(In Case F.)

287a. Bones of the Leg, deformed by Rickets.
(In Case F.)

288. A Fibula of an adult. Its shaft is curved and flattened. The principal curve is directed with its convexity inwards; but there is also a slight curvature forwards in the upper part of the shaft. A. 144
(In Case F.)

MOLLITIES OSSIUM.

289. Section of a Humerus from the same subject as No. 293. The walls of the bone are thin, but of their natural hardness. The adipose substance filling the medullary cavity and cancellous texture is converted by maceration into a white firm substance resembling adipocire. I. 130

From a woman, 72 years of age, who had been bed-ridden with paralysis of the lower extremities for nearly two years. Her hip and knee-joints were fixed in permanent flexion. At short intervals before her death her right femur and right arm were fractured when she was being turned in bed.

Presented by the teachers of the Medical School at the London Hospital. The case is related by Mr. T. B. Curling, in the *Medico-Chirurgical Transactions*, vol. xx, p. 356. London, 1837.

290. A Pelvis showing extreme distortion, the result of Mollities Ossium. The cavity of the brim is completely closed by the folding together of the ossa innominata: fractures appear to have occurred at the points where the bone is acutely bent. The sacrum is folded on itself in a similar manner. The bones are light, porous, and thin; the walls of the femora are extremely thin. A. 167

From a woman, aged 32, who died three weeks after the operation of Cæsarian section. She suffered from symptoms closely resembling those of rheumatism for two years before her death. For some time the urine had contained a large amount of triple phosphates. The flat bones, especially the scapula and ossa innominata, were affected by the disease; the long bones to a slight degree. Formerly five feet one and a half inches, her height diminished to four feet two and three-quarter inches. She had given birth without difficulty to three living children at the full term of gestation.
(In Case E.)

291. A Pelvis showing the deformity characteristic of Mollities Ossium. The bones are thin and very light. The cavity of the brim is heart-shaped from the pressure inwards of the acetabula and consequent projection and folding together of the pubic bones. The obliquity of the pelvis is lost. The sacrum

and coccyx are sharply curved forward, and the bones of the latter are firmly anchylosed together and to the sacrum. The antero-posterior diameter of the brim is $3\frac{3}{4}$ inches, the oblique $4\frac{1}{8}$ inches, the antero-posterior at the outlet $3\frac{1}{4}$ inches, the inter-spinous $2\frac{7}{8}$ inches.

From a woman aged 32, on whom Cæsarian section was performed.—See *Martha Ward Book*, vol. iii, p. 153.

(In Case E.)

292. A similar Specimen.

(In Case E.)

293. Section of a Femur affected with Mollities Ossium. The walls of the bone are very thin, and their substance so soft as to be readily divided by a knife. The osseous lamellæ and filaments are removed from the cancellous texture; and the medullary cavity and all the cells of the cancellous texture are filled by a fatty substance, which is now, after maceration and the action of alcohol, of the consistence of lard. I. 129

This specimen was taken from the same patient as No. 289.

294. Section of a Femur affected with Mollities Ossium. The walls of the bone are thin, soft, and flexible, and their lamellæ are partially separated. The place of its medullary and cancellous tissue is occupied by soft, jelly-like, transparent fat, of various shades of yellow and pink: some of it was deep crimson. A similar kind of fat appeared to be diffused through the proper texture of the walls. Scarcely any of the osseous part of the medullary texture remains, except a thin layer beneath the articular surface of the bone. The periosteum and articular cartilages are healthy. I. 233

295. Sections of the Upper Part of the same Femur, and of the Patella of the same patient, macerated. The fat diffused through their whole tissue is converted into adipocire. The neck of the femur is a little less oblique than is natural, but it is not shortened, nor is the shape of the head altered. I. 234

From a lady 30 years old. The disease had been some years in progress, and had affected in various degrees all the bones of the extremities. This femur had been fractured by a slight force shortly before death.

Presented by R. W. Tamplin, Esq.

SYPHILITIC DISEASES OF BONES.*

OSTEOPLASTIC OSTITIS AND PERIOSTITIS.

296. A Skull-Cap, considerably thickened and heavy. On the inner surface of the frontal bone the median ridge is enlarged by new formation of bone, and on either side of it there is a rough depressed patch.

From a man aged 39 years, who died of pneumonia. There were nodes on both the tibiæ, and a large pigmented scar on the left shin.—See *Post Mortem Book*, vol. viii, p. 44.

(In Case F.)

297. Portion of the base of a Skull. On the inner surface of the temporal bone there is a patch 2 inches by $\frac{3}{4}$ inch covered by an irregular deposit of bone. There were similar but smaller deposits on the upper surface of the orbital plate of the frontal bone.

From a man aged 26 years, who died of cerebral meningitis. There was a distinct syphilitic scar on the penis, but no other evidence of constitutional syphilis.—See *Post Mortem Book*, vol. viii, p. 18.

(In Case F.)

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* The absence of history renders the syphilitic nature of some of the following specimens doubtful, but they have been placed in this group because the appearances or other evidence point to a syphilitic origin.

298. Skeleton of a Negro of unusually high stature, who for many years suffered from constitutional syphilis. All the long bones of the extremities are thickened and irregular, either generally or in parts, especially the right tibia and fibula, the latter being covered with rough spiculæ of bone. The disease affects symmetrically the corresponding parts of opposite bones, but in a different degree.

Amputation through the lower third of the right thigh was performed by Mr. Earle on account of syphilitic ulceration and periostitis of the right leg. The patient died soon after the operation.

(In Case A.)

299. A pair of Clavicles. Extending over the greater part of the external surface of each, is an irregular deposit of porous new bone, by which their thickness is much increased. In many places the new bone is perforated by ulcers of various sizes, and through some of these the surface of the original shaft may be seen. A section of the left clavicle shows that the interior of the bone has become condensed and heavy from the deposit of bone in the cancellous texture.

From the body of a man who had long suffered from syphilis.

300. Two Femora, two Tibiæ, and two Humeri, parts of the walls of which are thickened, chiefly by addition of new bone to their exterior. The disease affects symmetrically the corresponding parts of the opposite bones. A. 2

(In Case F.)

301. A Femur, Tibia, and Fibula, with thin node-like deposits of new bone on their surfaces. A. 11

(In Case F.)

302. Two Tibiæ and two Femora, exhibiting a considerable increase in the thickness and density of their walls. The section of one of the femora shows that the thickest part of the wall is composed of nearly uniform compact bone. A. 38

(In Case F.)

303. Two Femora, the shafts of which are generally enlarged. A. 5

(In Case F.)

304. Two Femora enlarged like the preceding. They show, as do also some of those already described, the grooves impressed on the surface of the thickened bone by the large transversely-running vessels of the periosteum. Three such grooves lying close together are seen above the inner condyle of the left femur, in one of which an artery, and in the others its associated veins, were lodged. A. 6

(In Case F.)

305. A Tibia and Fibula partially enlarged, and presenting several nodes on their subcutaneous surfaces. The nodes consist of new bone deposited on the surface in the form of slight, gradually-rising, convex, oval elevations. A. 10

(In Case F.)

306. A Tibia of which the middle of the shaft is enlarged by the formation of a node on its anterior surface. A. 8

(In Case F.)

307. Sections of a Tibia partially enlarged, and with nodes on its anterior surface. The sections of the nodes show that the disease which constitutes them is confined to the wall of the bone. A. 13

(In Case F.)

308. Portion of a Tibia with new bone formed round the middle of its shaft, and ulceration extending through part of the new bone to its surface: the effects of syphilis. A. 86

(In Case F.)

309. Portion of a Tibia with a node-like enlargement of the middle of its shaft. A. 20

(In Case F.)

310. A Tibia partially enlarged, chiefly by the formation of new bone round the middle third of its shaft. A. 4

(In Case F.)

SYPHILITIC OSTITIS WITH CARIES.

Tuberculated Ulceration.

311. A Skull exhibiting the effects of syphilis. The palate, septum nasi, and the lateral boundaries of the nose, are destroyed by ulceration extending as high as the middle turbinated bone. The outer table of nearly all the upper part of the skull is tuberculated and very extensively ulcerated, and in several places the ulceration has penetrated the inner table. A. 89

(In Case F.)

312. Parts of a Tibia, Clavicle, Humerus, and Skull, from a man who died with syphilis. The shaft of the tibia is enlarged by the expansion of its walls and by external formation of new bone. In one part, the walls and the new bone covering them are penetrated by small irregular ulcers. The same disease has affected the middle of the clavicle; and in it the ulceration has extended so far that a slight force broke the remaining portion of its shaft. In the humerus the lower half of the shaft is thickly covered by light and porous new bone, through which many ulcers of various size have penetrated: some of these extend deeply into the original wall of the humerus, portions of which also appear to have suffered necrosis. In the skull the outer tables of the frontal and right parietal bone present an uneven tuberculated surface, seamed and starred, like the surface of confluent small blisters; through this, numerous distinct and coalescing ulcers penetrate, and reaching the diploe spread therein in wider spaces, and in a few instances pass also through the inner table. The outer table of the left parietal bone is tuberculated but not ulcerated. There is a similar but less extensive disease on the inner table of the right parietal and occipital bones. A. 34

(In Case E.)

313. The Skull, Femur, and Bones of the right upper extremity of a man who died with syphilis. They present, in a less advanced form, similar appearances to those last described. The tuberculated character which the outer table of the skull assumes, previous to its ulceration, is shown on the upper part of the frontal bone; and the stages in the progress of the little ulcers which penetrate and spread through the new bone, may be traced on the clavicles in which the process has just begun, and on the radius and humerus on which it is more advanced; while on the femur, whose shaft like theirs is much enlarged by the formation of new bone, there are many small round and oval apertures with smooth borders, indicating that similar ulcers have been healed. A. 35

(In Case F.)

Presented by William Beaumont, Esq.

314. Portion of a Skull, in which nearly the whole surface of the outer table is tuberculated and ulcerated. In the greater part of its extent the disease resembles that described in the two preceding specimens: but over the occipital

bone the ulceration presents the more diffuse, rough, jagged form which belongs to that occurring in acute inflammation and suppuration on the surface of a bone. A. 66

(In Case F.)

315. A Skull-Cap, in which a large portion of the outer table of the frontal bone is rough, grey, porous, and tuberculated, presenting the same change as has preceded the ulceration in many of the specimens just described. In this case ulceration has commenced in only two or three points about the middle of the diseased surface. The corresponding portion of the inner table is porous, as if it had been more than naturally vascular, but is not otherwise diseased. A. 67

(In Case F.)

316. A Skull-Cap, with general thickening and induration of the frontal bone. Its outer table, like that of the preceding specimen, is slightly tuberculated, and in one situation ulcerated; and all the adjacent parts appear to have been unnaturally vascular. A. 69

(In Case F.)

Annular Ulceration.

317. A Skull-Cap, in which there are several distinct syphilitic ulcers. The ulcers are nearly circular, and affect corresponding parts of both tables. Some of them present an annular form, a groove of ulceration extending round a central portion of diseased bone which is gradually removed as the groove widens towards the centre. A. 109

(In Case F.)

318. A Skull-Cap, exhibiting several distinct roundish ulcers, some of which have penetrated both its tables. They commenced in the outer table and present traces of the same annular primary form as those in No. 320. A. 70

(In Case F.)

319. A Skull, on the frontal and left parietal bones of which are several patches of caries, probably syphilitic; two of these over the orbits are symmetrically placed. A large aperture in the skull in the line of the coronal suture has been produced by the disease. The bones of the skull-cap are generally abnormally thickened and vascular.

(In Case F.)

320. A Skull-Cap, exhibiting extensive syphilitic ulceration of its outer table. The ulcers are distinct, large, and round. Some of them, especially one on the frontal bone, show that they commenced in an annular form, an ulcerated groove forming round a portion of diseased bone, which portion was subsequently removed by the widening of the groove. The inner table is very vascular and less extensively ulcerated. Parts of the outer table are tuberculated. A. 63

(In Case F.)

OTHER SPECIMENS OF CARIES.

321. A Skull-Cap, exhibiting extensive superficial ulceration of the outer table, probably the result of syphilis. A. 65

(In Case F.)

322. A Skull-Cap, exhibiting extensive ulceration of the outer table, and ulceration to a less extent of the inner table. The parts remaining between the ulcers have a tuberculated surface. A. 61

(In Case F.)

323. A Skull-Cap, exhibiting extensive syphilitic ulceration of the parietal bones, with thickening and hardening of the inner table. A. 82

(In Case F.)

324. A Skull-Cap, in which there is consolidation of the diploe, with increased hardness of the tables, and ulceration of the frontal and left parietal bones. A. 88

(In Case F.)

325. A Frontal Bone, exhibiting ulceration of its outer table penetrating to the frontal sinus. The border of the ulcer is surrounded by an unequal ring of new bone. The disease was probably the result of syphilis. A. 56

(In Case F.)

326. Portion of a Skull, with syphilitic ulceration of the frontal bone extending into the frontal sinuses and through the inner table of the skull. A. 84

(In Case F.)

327. A Skull-Cap, exhibiting ulceration of a small circumscribed portion of the outer table of the frontal bone, with thickening of the inner table in the corresponding situation. A. 68

(In Case F.)

328. Portion of the Base of a Skull, exhibiting syphilitic ulceration of the palate, and the front of the alveolar process. There is also ulceration of the left malar bone, which presents the same characters as the ulceration in No. 313 and others of the preceding specimens. A. 73

(In Case F.)

329. Portion of a Tibia exhibiting superficial ulceration, with node-like thickening of the bone around the ulcerated surface: probably the effects of syphilis. A. 52

(In Case F.)

330. Section of a Tibia enlarged in its lower third by the external formation of new bone. The new bone is penetrated by some small irregular ulcers, probably of a syphilitic nature. A. 27

(In Case F.)

331. The anterior portion of a lateral section through of an injected Tibia: the skin has been left upon its inner surface. Near to the tuberosity, and in close proximity to the knee-joint, a breaking down gumma is cut across; the bone beneath it is rough and superficially destroyed. A little lower there is a hard node on the spine of the tibia. On the inner side of the section an ulcerating gumma covering the head of the bone is cut across, also another gumma a little below it. The destruction of the bone beneath them is well seen, as also their non-vascularity. The centre of the shaft is hard and dense, but the head is softened, rarefied, and its cancellous tissue is filled with pulpy medulla. The knee-joint was chronically inflamed—the synovial membrane being thick and pulpy, the cartilages undergoing fibrous degeneration and absorption at the edges.

From a man aged 33; he had primary syphilis ten years previously. Four years before his admission, a swelling appeared on the front of the tibia, which, after subsiding and growing worse, burst three months before his admission to the hospital, leaving an opening leading into a cavity in the head of the tibia, from which some carious bone was removed by operation. The operation wound ulcerated, and finally amputation was performed.—See *Henry Ward Book*, vol. vi, p. 242.

331a. The other Section of the head of the same Tibia. The cancellous tissue of the articular end is rarefied, and upon the external aspect of the head two depressions are cut across, surrounded by an irregular deposit of bone; they

correspond to the positions of the gummata shown in the preceding specimen; beneath the lower one the compact wall of the bone is rarefied.

(In Case F.)

SYPHILITIC NECROSIS.

332. Necrosis of the Frontal Bone the result of Syphilis.

From a man aged 25.

333. A Skull, in which, in the course of Syphilitic disease, there occurred necrosis of several large portions of the frontal and parietal bones. Many of the sequestra were completely separated, and the surface of the diploe and inner table exposed by their removal appears to have healed smoothly; but many other portions in which the necrosis extends through both tables of the skull, are only partially detached. The portions of the skull, which remain behind those that have suffered necrosis, appear quite healthy: they were not even increased in vascularity. A. 112

(In Case F.)

334. A Skull-Cap, exhibiting Necrosis of a portion of the outer table of the frontal bone, with thickening of the inner table to a corresponding extent. The dead bone is black: previous to its necrosis it appears to have been superficially ulcerated. A very shallow groove of separation surrounds it. There is ulceration of the outer table of the frontal bone above the right orbit. A. 108

(In Case F.)

335. The Skull-Cap of a young woman, in which, in the course of syphilis, the greater part of the outer table of the frontal bone suffered necrosis, and was nearly separated from the adjacent bone. A deep groove has formed round the dead portion, and a large part of its under surface is separated. The inner table has not perished, but beneath the centre of the necrosed portion there are several irregular ulcerated openings in it. There are two small superficial ulcerations of the external table near the sagittal suture, on corresponding parts of the two parietal bones. A. 90

(In Case F.)

336. A Skull-Cap, exhibiting extensive Necrosis, which apparently succeeded syphilitic ulceration of the outer table of the frontal bone. A groove has formed around the dead bone, and extends for some distance beneath its edges. There are cicatrices of old ulcers on the parietal bones; and the skull is heavy. A. 105

(In Case F.)

337. A Skull, with syphilitic Necrosis and Ulceration of a portion of the left parietal bone. The dead bone has been in part removed. The frontal bone is tuberculated and vascular. A. 107

(In Case F.)

338. A Skull-Cap, exhibiting extensive Necrosis of the outer table, and, to a small extent, of the inner table, of the frontal bone. The necrosis, as in the two preceding specimens, occurred in the course of syphilitic ulceration. A. 111

(In Case F.)

339. The Upper part of a Skull, exhibiting the effects of syphilitic ulceration and necrosis. A large portion of the frontal bone exfoliated long before the patient's death, and the borders of the aperture, as well as the surrounding surface of the bone, are smoothly healed. A necrosed portion of the occipital bone was removed about a month before the patient's death: the aperture remains with

ulcerated margins. There are also irregular superficial ulcerations on the external table of both the parietal bones, and on many other parts of the skull are appearances indicating unnatural vascularity. A. 123

(In Case F.)

340. Portion of a Skull-Cap, exhibiting Necrosis of a previously diseased portion of its outer table. A. 117

From a patient who had a suppurating node upon the cranium in the situation and to the extent of the surface of bone which has perished.
(In Case F.)

341. A Sequestrum, consisting of the entire thickness of the greater part of the Frontal Bone. The outer surface is rough and carious; the inner, which was in contact with the dura mater, is jagged and spiculated.

The portion of bone was removed by operation from a man aged 31 years. Ten years before he contracted primary syphilis, but had no secondary symptoms. The disease of the frontal bone commenced about a year before his admission to the hospital. He recovered from the operation.—See *Harley Ward Book*, vol. xii, p. 27.

342. A Skull-Cap, exhibiting some of the effects of syphilis. In some situations there has been a complete destruction of the bone through both tables of the skull; at the borders of the apertures thus made the disease seems to have stopped, and the parts appear to have cicatrised, for their edges are thin, smooth, and hard. In other situations ulceration appears to have been in progress, the bone in these parts exhibiting a rough surface, porous texture, and many small deeply penetrating holes. The spaces left by the removal of the bone are filled by membrane, in which there are several small deposits of new bone; and the outer surfaces of all the portions of the skull which remain between the ulcers are tuberculated, seamed, and starred, as in No. 313 *et seq.* A. 58

(In Case F.)

343. A Skull-Cap, large portions of which have been destroyed by syphilitic ulceration like that in the preceding specimen. A. 59

The two preceding specimens were taken from patients who died in the venereal wards of the hospital while Mr. Pott was surgeon.
(In Case F.)

344. Section of a girl's face, in which syphilitic Necrosis and Ulceration affected large portions of the maxillary and malar bones. The separate portions of bone were exfoliated. I. 180

345. Six portions of hard closely cancellous bone removed from the cavities of a nose. They appear to be parts of diseased turbinated bones, which had suffered necrosis after being exceedingly enlarged, thickened, and indurated. I. 257

The patient was 40 years old; he had had syphilitic disease of one testicle, and had been for twelve years liable to syphilitic pains in the limbs, when he received a severe injury of the nose in a fall. This disease of the bones followed the injury. It was very slow in its progress, and the portions of bone here shown were not more than half of what was removed. After their removal the patient remained well and without deformity of the nose.

346. Portions of the Palate and Vomer of a young woman, aged 27. The bones came away through the nostrils. She had suffered from Syphilis for seven years.

347. Portion of the wall of a Tibia separated by exfoliation. The dead bone, which had been diseased some time before it perished, is porous and rough on its outer surface; it comprises a part only of the thickness of the wall. The disease was connected with syphilitic periostitis. I. 210

DISEASES OF BONES DUE TO CONGENITAL SYPHILIS.

348. A Skull-Cap, in which there is an irregular increase in the thickness of the diploe, producing large convex elevations of the outer surface about the prominences marking the original centres of ossification of the parietal bones. The diploe is consolidated as well as thickened: the outer table is smooth and healthy; the inner table is deeply impressed by the vascular grooves. The cavity of the skull appears to have been small, especially in the parts beneath the external elevations. A. 37

(In Case F.)

349. Sections of a Skull-Cap, showing a similar change, but in a rather less degree. A. 43

The changes in this and the preceding specimen were probably due to congenital syphilis. (In Case F.)

350. Skull-Cap of a Fœtus. There is a thin deposit of porous bone on the external surface along the margins of the sutures, especially the frontal, and in the temporal fossa.

351. The left Tibia and Fibula of the same Fœtus, showing enlargement of their shafts by the formation of a layer of porous, soft, chalk-like bone on their surfaces. The deposit is thickest at the middle of the tibia, where it forms a nodular enlargement.

Microscopically it was found to consist of lamellæ of bone vertical to the surface, in which the ossification was very irregular and incomplete. *See* Microscopic Sections, No. 7.

352. Several of the Long Bones from the same Fœtus, showing with few exceptions separation of the epiphyses from the diaphyses. The extremities of the diaphyses are soft, rough, as if breaking down, and the periosteum is in some instances separated at this point to a slight extent, leaving the surface of the bone rough and apparently carious. Sections show that the extremities of the diaphyses are infiltrated with a yellowish, granular material.

The fœtus, from which the bones were taken, was aborted at the sixth or seventh month from a woman, who had just been admitted into the hospital for a stricture of the rectum. The disease in the rectum was cured, but returned a year later. The disease in the bones of the fœtus was believed to be syphilitic. See account of case by Mr. Eve, in the *Transactions of the Pathological Society*, vol. xxxi, 1880. Microscopic sections are preserved, No. 6.

353. Several of the Bones of a Fœtus, on the surface of which there is a more or less general deposit of a thin layer of finely porous chalky-looking bone, which terminates abruptly just before the extremity of the diaphysis is reached. The deposit is most abundant and uniform on the fibula and radius. The section of the bones has a natural appearance, but they were found to be abnormally dense. The skull-cap was normal.

Microscopic examination of the bones showed that the line of ossification was slightly irregular, and the layer of calcified cartilage was increased in thickness. The fœtus was born dead at the seventh or eighth month of gestation. The parents were Italians, had been married six years, and this was the sixth pregnancy; the other fœtuses were aborted at the third or fourth month. The father before marriage had a sore on his penis, followed by sore throat and an eruption. The mother, since her marriage, had had no outward manifestation of syphilis, but had suffered from a vaginal discharge. Microscopic specimens are preserved, No. 8.

MISCELLANEOUS SPECIMENS.

354. A Tibia, the external surface of which is mottled by irregular effusions of blood into its substance. I. 48

Specimen No. 456 was taken from the same individual.

355. Section of the anterior part of a Tibia, in which there are numerous small effusions of blood between the periosteum and bone, and in the superficial layers of the bone. I. 213

From the same limb as Specimen No. 465. The patient was a man 27 years old; a tumour of the lower extremity of the femur had existed twelve months with obscure symptoms, and made steady progress till the limb was amputated.

356. A Femur, exhibiting a slight enlargement of the lower part of its shaft. The exterior of the bone at this part is smooth and healthy, but in the corresponding situation in the interior there is a cavity from which the osseous part of the medullary tissue has been removed. The rest of the cancellous tissue is very delicate and light. A. 93

(In Case F.)

357. A Skull-Cap, presenting a worm-eaten appearance along the course of the blood-vessels on its inner surface. The bone in the recent state was intensely congested.

(In Case F.)

From a man who died from a cancerous tumour occupying both crura cerebri.

TUMOURS OF BONES.

OSSEOUS TUMOURS (OSTEOMATA).

EXOSTOSES (Circumscribed Osteomata).

358. A large compact exostosis of the Skull, which springs from the lower and back part of the right parietal bone. It is attached by the central portion of its base only. I. 310

Presented by Mr. Ilott.

359. Sections of an Occipital Bone, to the lower portion of which an exostosis, nearly an inch in diameter, is attached by a narrow base. The outer part of the exostosis is smooth and very dense; within, it is in part cancellous and in part nearly as dense as ivory. Its textures have coalesced with those of the outer table and diploe of the skull. I. 71

360. Section of a Skull, exhibiting a small eburnated exostosis, with a narrow base, growing from the outer table of the frontal bone, just above the external angular process. There are also two broad nodules of bone, one on the parietal, the other on the occipital bone. A. 124

(In Case G.)

361. A Skull-Cap, with a rounded exostosis springing from the outer surface at the anterior inferior angle of the left parietal bone.

From a woman, aged 65 years. There was no evidence of constitutional syphilis.—See *Post Mortem Book*, vol. viii, p. 60.

(In Case G.)

362. An Exostosis, removed from the mastoid portion of a temporal bone. It is of semi-elliptical shape, measures about two inches and a half by one inch and a half, and is nearly an inch in thickness. It was attached by a comparatively narrow crescentic base, which was with great difficulty broken off the skull in the removal of the tumour. It is composed of moderately heavy bone, almost entirely covered in with a thin layer or wall of compact tissue. I. 297

The patient was a woman 21 years old. She recovered after the operation.
Presented by Mr. Jonathan Toogood, by whom the case is related in his *Reminiscences of a Professional Life*, p. 99.

363. A Scapula, showing an outgrowth of bone from the lower margin of the glenoid cavity.
(In Case G.)

364. The inferior angle of a Scapula, with a section of a bony tumour growing from it. The base and interior of the tumour consist of cancellous bone, which is continuous with the cancellous tissue of the scapula. The exterior is formed by a layer of cartilage of irregular thickness, and the whole is invested by fibrous tissue. I. 202
Presented by W. Beaumont, Esq.

365. A Humerus, with a nodulated exostosis growing from the front and upper part of its shaft. The tumour is much narrower at the point of its connection with the shaft than elsewhere. A. 131
(In Case G.)

366. A Humerus, with a broad-based and sharp-edged growth of bone from the outer side of its shaft, close by the attachment of the deltoid muscle. A. 128
(In Case G.)

367. A Humerus, showing a well-marked supra-condyloid process. A. 135
(In Case G.)

368. A similar Specimen. A. 162
(In Case G.)

369. An Exostosis, which was removed from the Humerus of a boy 14 years old. It was situated at the insertion of the pectoralis major. Its outer surface is covered by periosteum and studded with small nodules of cartilage. Internally it consists in part of a white and dense osseous texture, and in the rest of its extent of a cancellous texture, the cells of which were filled by an oily fluid. At the bottom of the bottle are portions of the tumour which were separated in the operation. I. 105

370. Section of a Fore-finger, with an exostosis from the ulnar side of the distal extremity of its first phalanx. The outgrowth, of a rounded irregularly knotted form, is composed of cancellous tissue, covered with a thin layer or wall of compact bone. These tissues resemble, and are respectively continuous with, those of the phalanx itself. I. 282
The patient, a boy 6 years old, had symmetrical tumours, which probably resembled this in structure, on the lower ends of his radii, on his humeri, scapulæ, fifth and sixth ribs, fibulæ, and internal malleoli; on each of these bones one tumour, those on the right side being somewhat larger than those on the left. To the tumour here preserved no corresponding one existed on the left fore-finger. The patient's father, an otherwise healthy man, 40 years old, had as many or more tumours of the same kind on various bones, which had all commenced in early childhood, and ceased to grow when he attained his full stature. Similar tumours also existed on the bones of four of this man's cousins, viz., of three sons and one daughter of his mother's sisters.

371. The upper half of a Femur. A spinous outgrowth of bone projects inwards and forwards, and is attached by a broad base at the position of the lesser trochanter. It originated apparently from that process, probably by ossification of the tendon of the psoas muscle.
The specimen was taken from the body of a youth in the dissecting room.
Presented by Mr. Luther Holden.

372. The upper part of a Femur, with a bony process of a pyramidal form and about three inches in length, continued from the trochanter minor. To the extremity of this bony process the tendon of the psoas and iliacus muscles is attached. A. 126

(In Case G.)

373. The upper part of a Femur, exhibiting a bony process like that last described, which was connected with the trochanter minor by ligamentous substance. A. 127

(In Case G.)

374. A Femur, on the middle of the shaft of which, on its outer and front aspect, is a large, flat, broad-based and pointed osseous growth, like the two following specimens. A. 153

(In Case G.)

375. Sections of a Femur, and of a growth of bone from the outer side of its shaft. The growth has a broad base of attachment, and a smooth convex surface: one of its margins rises gently from the shaft, the other is sharp and overhanging. The section shows that the growth is almost entirely formed of compact tissue, and is wholly external to the wall of the femur. Two plates of bone were found in the muscles close to the femur. They are preserved in Series VI, No. 1170. A. 129

(In Case G.)

376. Sections of a Femur from the surface of which an Exostosis has arisen. The growth is of a flattened, elongated form, attached by a broad base, and with pointed processes directed downwards: it presents a cancellous texture surrounded by a thin shell of compact bone. The walls of the femur and its medullary cavity in the situation of the exostosis are perfectly sound. I. 186

377. The lower part of a Femur, from the front of which a broad flat exostosis had grown, and was removed by operation. The surface from which the exostosis was cut is rough: it is formed of cancellous tissue of healthy aspect. The exostosis was composed of a similar tissue invested by a thin layer of compact substance. I. 222

The upper margin of the base of the exostosis is very nearly three inches above the border of the articular cartilage of the trochlea of the femur; but it was completely covered by the synovial membrane, and the whole tumour projected into the cavity of the knee-joint. It had been growing for two or three years, and had produced great pain and frequent attacks of inflammation of the knee-joint. The patient died with deep abscesses around the femur, about ten days after the operation.

378. An Exostosis removed from the upper part of a Femur. It was attached to the bone, just behind and below the lesser trochanter, by a low stem about an inch in diameter. From this stem it enlarges into an irregular deeply lobed and nodular mass, measuring from three to four inches in its several dimensions. It is composed of a light cancellous tissue, covered in most parts with a thin compact layer, on which, in one place, there appears a thin deposit of such new bone as is formed in inflammation. Where the cancellous tissue is uncovered, cartilage existed in the recent state. 35. 93

The patient was a man about 30 years old. The growth had been slow and painless, but constant. Over the most prominent part of the tumour large bursal sacs were formed. Perfect recovery followed its removal.

379. Section of a Cancellous Exostosis removed by operation from the lower and inner part of the femur of a man 19 years old. Its exterior is covered by a layer of cartilage. I. 183

The exostosis had been united to the femur by a narrow neck, which, it is probable, was broken by external violence: for, in the operation, the narrow neck of the tumour was found

connected with the femur only by soft substance, and it fitted in an excavation in the femur upon which it had freely moved.

380. Sections of a Cancellous Exostosis which was removed from the inner and lower part of a Femur, to which it was attached by a narrow base. A layer of cartilage invests it, and is itself invested by a thin layer of fibrous tissue. I. 231

381. An Exostosis removed by operation from the Femur, just above the inner condyle, of a girl 16 years old. The exterior of the tumour is covered by a thin layer of dense fibrous tissue; beneath this is a layer of cartilage enclosing the bone, which has a cancellous texture and contains medulla. I. 178

382. A large Exostosis removed from the inner and back surface of the lower end of the left Femur of a man aged 22 years. He had known of its existence for six years. It had lately grown very rapidly. There were nine or ten smaller tumours of the same kind on other bones. I. 329

383. The Femur sawn through, from which the preceding preparation was removed, with the bones of the leg and foot, showing several exostoses of various size on different parts; all of them are situated near the extremities of the bones. A. 169

(In Case G.)

384. A slender growth of bone springing from the Femur just above the internal condyle, and probably in relation with the tendon of the adductor magnus. A. 134

(In Case G.)

385. Section of a Cancellous Exostosis removed from the upper and inner part of a girl's Tibia. Its base and central part are formed of fine cancellous osseous tissue, and its exterior is formed of a layer of cartilage, like that of the fœtal skeleton. I. 281

386. Sections of a Cancellous Exostosis removed from the Tibia; it is covered by a thin layer of cartilage. I. 245

387. Part of the shaft of a Fibula, with a cancellous exostosis which grew from the fibular aspect of the tibia. The tumour, of somewhat spherical shape, and about an inch in diameter, was attached to the tibia by a narrow pedicle; its surface is covered by a layer of cartilage. As it grew outwards, the fibula adapted itself to it, forming a curve and flattening itself over its convex surface. I. 299

The patient was a young girl. The tumour was of slow growth, and before removal was supposed to spring from the fibula, whose thinned shaft could not be distinguished from its surface. Recovery followed the operation.

388. A Cancellous Exostosis removed from the metatarsal bone of the Great Toe of a man 19 years old. Its exterior is covered by a thin layer of cartilage, which is invested by fibrous tissue. I. 182

389. The terminal Phalanx of a Great Toe, on the inner margin of which, near its distal extremity, there is a flattened, broad exostosis, composed of hard finely cancellous texture, and attached by a narrow base. The adjacent part of the phalanx has spongy new bone deposited upon it. I. 226

390. The terminal Phalanx of a Great Toe, near the end of the upper surface of which there is an exostosis, composed of hard and finely cancellous bone. I. 106

Presented by Robert Liston, Esq.

391. Sections of the terminal Phalanx of a Great Toe, exhibiting an exostosis

attached to its extremity. The bony growth was immediately surrounded by a soft and fibrous substance which formed part of an external tumour projecting from beneath the nail. I. 157

From a man aged 30 years.

392. The terminal Phalanx of a Great Toe, which was removed by operation. The nail is raised and pushed aside by an exostosis beneath it. A small portion of the growth has been removed for the purpose of showing its structure. I. 107

Presented by Robert Liston, Esq.

393. Section of the terminal Phalanx of a Great Toe. A small exostosis has grown from the anterior and upper part of the bone, and has elevated the nail: it is formed of cancellous tissue surrounded by a thin layer of compact substance. I. 214

394. Section of the terminal Phalanx of a Little Toe, and of an exostosis, rather larger than the toe itself, which has grown from the extremity of its dorsal surface, lifting up the nail. The greater part of the tumour is formed of a closely cancellous bone, like that of the phalanx itself; the remainder, forming its exterior portion, consists of tough fibrous tissue, like thickened periosteum. I. 277

395. The other Section of the same Phalanx and Tumour, macerated and dried. I. 278

The patient was a woman, about 25 years old. The tumour had been growing regularly, but with scarcely any pain, for two years.

Vide Nos. 3257 to 3259, Series L.

DIFFUSED OSSEOUS GROWTHS (Diffused Osteomata).

396. A Diffused Osteoma, which has grown into the frontal sinus. I. 316

From a young woman, aged 20, who was admitted to the Hospital with protrusion of the left eye, due to the projection of the osseous growth at the upper and inner angle of the orbit. The protrusion of the eye had been first observed three years previously. A portion of the growth was with difficulty sawn off, with the hope of producing necrosis and separation of the whole mass, but the patient died of meningitis.

397. Sections of the Bones of a Face, exhibiting an Osseous Growth filling up the maxillary sinuses. The sections through the sinuses show a small cavity remaining in each, indicating, as the disease of the adjacent bones also does, that their obliteration is the consequence, not of the growth of tumours into them, but of the thickening of their walls. The new bone by which they are increased in thickness is hard, nearly solid, and heavy; it is almost all formed on their inner surfaces; only a few small similar growths spring from their outer surfaces, and project on the face and into one of the orbits. The septum nasi and spongy bones are similarly thickened, enlarged, and very dense in their texture. I. 62

398. A superior Maxillary Bone, in which the cavity of the antrum is completely filled up by a growth of porous or very finely cancellous bone. The external surface of the maxillary bone is superficially tuberculated and porous, and its walls are changed into bone of the same texture as that which occupies the place of the antrum. The disease is attended with general, but irregular enlargement of the maxillary bone; its alveolar portion alone retains a nearly natural form. The palate-bone is healthy. I. 259

The patient was a girl 15 years old. Enlargement of the nasal process of the superior maxillary bone had been observed for eight months, and was still increasing. The general health appeared good, and the disease was painless. The upper jaw was removed, and ten days after the operation the patient died with erysipelas. The case is related in Mr. Stanley's *Treatise on Diseases of the Bones*, p. 297.

399. Portions of a superior Maxillary Bone, diseased like that last described, and which separated after Necrosis. The portions, before division, formed a nearly spherical mass of hard, heavy, and finely cancellous bone. I. 260

The patient was a man 37 years old. A smooth prominence of the nasal process of the right superior maxillary bone had been noticed for two years; but it was not increasing, and he was admitted into the hospital with what appeared to be necrosis of the alveolar portion of the jaw, and suppuration around it. After four months, this mass of bone, which occupied the position of the antrum, completely separated and was removed. The cavity which remained opening widely into both the mouth and the nose, gradually contracted or was filled up, and the man recovered perfectly.

400. A dense Osseous Tumour, involving the whole of the left superior Maxillary Bone.

From a boy aged 9 years.—See *Abernethy Ward Book*, vol. i, p. 344.

401. A portion of the left side of the body of the lower Jaw of a child, corresponding with the canine and the first two molar teeth. Projecting from its external surface is a tumour composed of cancellous tissue covered with a layer of compact bone. The periosteum investing the tumour is greatly thickened, but was found under the microscope to be normal in structure.

From a child 10 years old. A tumour of the jaw had been observed eighteen months, and a portion of it had been removed before she came into the hospital. On her admission the growth was increasing so rapidly and the parts over it were so vascular that it was feared it was of a malignant nature. The child recovered after the operation.

402. Portion of an Ulna on which a large Osseous Tumour has arisen from the whole of its articular surface between the olecranon and coronoid process. The tumour, compact on its surface and cancellous within, is lobed and irregularly nodulated. A. 136

(In Case G.)

403. Bones of the Fore Leg of a Horse, on which are numerous nodulated and rough growths of hard bone. They form a very large mass around the distal extremity of the metacarpal bone. A. 154

(In Case G.)

404. Section of the Hind Leg of a Dog, in which the Knee- and Ankle-Joints are surrounded by growths, which consist of a substance like fibro-cartilage and of bone. I. 253

The substance overlying and intermixed with the osseous growth consists microscopically of fibrous tissue, composed of coarse intermingling fibres with distinct contour; probably a growth from the periosteum.

405. Section of the opposite Hind Leg of the same Dog, with exactly similar growths. The soft parts have been removed by maceration. The osseous parts of the growths thus appear formed principally of crooked branching rods, like masses of coral round the joints. The bases of the growths are fixed on the surfaces of the articular ends of the bones; and bone, of the same general character, but much less abundant, is deposited on the patella, the shafts of the femur and tibia, and all the bones of the foot. I. 254

Presented by W. J. Bayntin, Esq.

406. The Radius and Ulna of a Dog, with similar growths of coral-like Bone on a large portion of their surfaces. Many others of the bones were similarly diseased. I. 255

Presented by W. S. Ward, Esq.

CARTILAGINOUS TUMOURS (Enchondromata).

407. An Enchondroma involving the whole of the superior Maxilla. The bone is much enlarged and no trace of the original wall is left. The two incisors

have been cut: a displaced capsule, which contained the cusps of two teeth, is seen on the posterior surface of the bone.

Microscopic examination showed that the tumour consisted of hyaline cartilage.

Removed from an infant aged 9 months. When 3 months old his mother noticed an enlargement of the gum; three months later the cheek began to swell and continued to increase in size. The child made a good recovery from the operation.—See *Stanley Ward Book*, vol. vi, p. 433.

408. Section of a Tumour, thirteen pounds in weight, which grew in front of the lumbar vertebræ of a soldier 37 years old. It was loosely connected with the vertebræ by its investing fibro-cellular tissue. It surrounded the aorta, and the inferior cava and iliac veins; the veins were compressed and filled by coagula. It was of an oval form, lobulated, sixteen inches long, and about six inches wide. Half the tumour was composed of a soft, pulpy, and flocculent medullary substance of a brownish colour. A small portion of this is preserved, and hangs in shreds; the other half of the tumour, including the greater part of that which is preserved, consisted of nodules of cartilage of various forms—rounded, oval, elongated, or quite irregular—and from one-fourth to three-fourths of an inch in diameter. These are invested and held together by layers of fibro-cellular tissue. They have both the obvious and the microscopic characters of fœtal cartilage. In the centres of some of the nodules of cartilage there are small portions of cancellous bone, like the points of ossification of the fœtal skeleton; the centres of others are rather softened. The limit between the cartilaginous and the medullary part of the tumour is well marked; and although they are in close contact, there is no appearance of any conditions intermediate between them, as if the one had degenerated into the other.

In a portion of the tumour, not shown in this specimen, the softening process had reduced many of the nodules of the cartilage into a yellow viscid fluid, which was retained, as in thick-walled cysts, in the fibro-cellular investments of the softened nodules, and was in some instances mixed with blood.

Presented by James Johnson, Esq.

409. Portion of a Spine, with a Tumour which, originating in the heads of the ribs, has extended into the cavity of the chest, and, through the foramina giving passage to the nerves into the vertebral canal, where it compresses the spinal cord within the arches of the fourth and fifth dorsal vertebræ. That part of the tumour which projects into the chest is covered by a thick membrane, which apparently originated in the pleura costalis separated from the ribs; a portion of this membrane has been removed. The tumour, which is probably composed of softened cartilage, consists of a gelatinous substance, in some parts approaching to the firmness of cartilage, and in others very much softer, and resembling boiled sago. I. 115

The patient was a man 30 years old. The compression of the spinal cord produced complete paralysis of the pelvic organs and the lower extremities.

410. Section of a Tumour which occupied the whole arm and shoulder. The section consists of a slice taken out of the middle of the tumour. A portion of the shaft of the humerus is destroyed; the head and upper part of the bone are imbedded in the tumour, which is also closely attached to the lower border of the scapula. The inferior angle of the scapula projects through an ulcerated aperture in the skin, in a state of necrosis. The greater part of the tumour is formed of a very firm, close-textured, and obscurely fibrous substance, glistening on its cut surface, and in general appearance resembling fibro-cartilage. Portions of it are much softer, broken-down, and mixed with blood effused into them. In many of the firmer parts small deposits of bone have taken place. The

head of the humerus is dislocated from the glenoid cavity, which is filled by part of the softer portion of the tumour. 35. 10

Examination with the microscope showed that the tumour was composed of fibro-cartilage; the cellular elements were very numerous and the matrix scanty.

There is a cast of the limb from which this preparation was taken, No. 5.

411. A Cartilaginous Tumour of the head of the Humerus, for which the head and neck of the bone were excised. I. 330

412. A man's Right Hand, with many cartilaginous tumours. Two or three in the metacarpal bones project in round bosses in the palm; one or two are in the first phalanx of the thumb, and one of large size in the first phalanx of the fore-finger, or in the distal end of its metacarpal bone. The rest of the fore-finger, and the whole of the second finger, are buried in a large spheroidal tumour, nearly six inches in diameter, in which the walls of their phalanges are only just discernible. The outlines of the several distinct tumours, by the fusion of which, it may be presumed, this great mass was formed, cannot now be seen. The first phalanx of the third finger has one large tumour. The little finger appears normal. All these tumours are composed of nodules of firm bright cartilage, which, in the recent state, presented various tints of pale blue, pink, purple, and grey. In many interspaces among the nodules there is much scattered cancellous bone, with yellow well-formed medulla. Over the dorsal surface of the large tumour there was a deep ulcer (as shown in the next specimen); but with this exception, the bones and all the other tissues surrounding the tumours appeared only expanded by their growth. I. 286

A drawing, No. 18, is preserved.

413. A Section of the largest Cartilaginous Tumour mentioned in the last description. It shows part of the ulcerated surface of the tumour. A deep excavation is formed in it. The surface exposed is formed by the substance of the tumour, scarcely altered in texture, and having no covering of granulations. In the recent state, a thin layer of half-dried pus, or imperfect cuticle, covered it. I. 287

The patient, from whom this and the preceding specimen was taken, was a man 56 years old. The tumours had grown from his birth to the time of his attaining his full stature, and some of them were congenital. Besides these, he had had a tumour of two pounds' weight in the fore-finger of his left hand, which was removed when he was 16 years old. A tumour as large as a walnut still remained on the little finger of the same hand. The whole length of his left tibia had nodules on its anterior and inner surface, and some enlargement existed on his left second toe. None of his relatives had a similar disease.

Presented by William Salmon, Esq.

414. The Right Hand of a lad 14 years old, in the bones of which are numerous cartilaginous tumours, like those in the preceding specimens. The metacarpal bone of the thumb contains two such tumours of small size; that of the fore-finger three or four, of which the smallest is an inch, and the largest three inches in diameter. The first and second phalanges also of the fore-finger contain similar tumours. The middle finger appears normal. The third finger has one tumour in its metacarpal bone, one in its first phalanx, and two in its second phalanx: the little finger has as many in corresponding positions: a section of that in its first phalanx, which is nearly three inches in diameter, is suspended by its side. All these tumours are alike formed of minutely lobed cartilage, pale grey, like that of the fœtus; in many of them are small scattered formations of cancellous bone, with medulla; all of them appear to have grown within the several bones, expanding parts of their walls and periosteum into thin osseous and fibrous investments. I. 284

415. The Little Finger of the Left Hand of the same patient. Part of its first

phalanx is expanded around a large cartilaginous tumour, having the same general structure as those in the preceding specimen. Half the tumour has been removed from the investment or shell of bone and periosteum extended round it. I. 285

The tumours had been growing, without any known cause, from early childhood, till the hand and finger were amputated.

Drawings of this and the two preceding specimens are preserved, Nos. 19, 20, 21.

Presented, with the preceding, by Mr. Joseph Hodgson.

416. Sections of a Little Finger, and of the Metacarpal Bone of the Fore Finger of a lad 17 years old. The greater part of the cancellous tissue of the shaft of the metacarpal bone is filled with a minutely lobed, pale greyish mass of cartilage, like that of the fœtal skeleton, which also, projecting through an absorbed portion of the wall, forms an hemispherical tumour rising from the shaft. A similar growth of cartilage exists within, and projects in a tumour beyond the first phalanx of the little finger; but in this instance the wall of the bone is not penetrated by the cartilage, but has grown in a thin layer around it. A portion of the medullary tube of the second phalanx of this finger contains a similar growth of cartilage, but scarcely any external tumour or enlargement of the bone is observable. I. 283

The patient had on his left hand four, and on his right hand six tumours such as these, but these alone were troublesome and increasing. The tumours had begun to grow when he was five years old, and their growth had been irregular, some increasing, while others remained stationary.

417. An Enchondroma involving the first phalanx of the Middle Finger, removed from a woman aged 52 years. It had existed for about three years. 35. 141

418. Section of a Femur, and of a large spheroidal Tumour which has formed around it. In the upper part of the bone a fracture occurred several years before death. The two portions of bone overlapping have firmly united. The tumour, which nearly surrounds the middle of the shaft, is composed of fibro-cartilage. A portion of the same substance occupies the corresponding part of the medullary cavity, in which the disease has apparently commenced. I. 111

Microscopic Examination.—The tumour consists of round and oval cells embedded in a matrix, which is for the most part fibrillated, but in places hyaline.

See microscopic sections, No. 9; and drawing, A. 2.

419. The other Section of the Femur last described. Its walls are irregularly thickened, with expansion of their texture and deposit of new bone on their exterior; and together with irregular cavities in the medullary tube, there is thickening and induration of its osseous tissue. I. 112

420. Section of a Humerus from the same person as the last-described Femur. It was fractured through the middle of its shaft some years before death. The fracture has firmly united, with a perfect apposition of the ends of the bone, and without any obliteration of its medullary cavity; but there is the same disease of the walls and the cancellous tissue as there is in the femur. I. 113

421. The other half of the preceding Specimen, macerated. I. 114

422. Section of a large Tumour growing from the lower part of a Femur, and composed of nodules of cartilage intermixed with osseous matter. Part of the morbid structure extends through the wall of the femur with which it is connected, and through the interior almost to the opposite side. I. 25

423. Section of a Femur, and of part of a large Enchondroma which closely surrounds it. The tumour exhibits various textures. The great part of it consists of a pale, whitish, firm substance, traversed by fibres and mixed with

spicula of bone; but in some parts its texture is much softer, and it has numerous small thin walled cysts imbedded in it. The texture of the bone itself is natural, except that its external surface is rough and deprived of periosteum, as if that membrane were involved in the tumour. I. 22

There is a cast of the limb from which this tumour was taken—No. 7. The tumour had grown rapidly but without much pain, and the patient recovered after the amputation of the limb.

Microscopic Examination.—The tumour consists of a number of large round nucleated cells and free nuclei embedded in a scanty matrix, which is in places hyaline, in places partly fibrillated.

See microscopic sections, No. 10; and drawing, A. 1.*

424. Section of a Tibia, and of a large Tumour which has formed around its upper third. One half of the tumour, the vessels of which have freely received the injection, is of a soft, fleshy, vascular texture. The other half, into which the injection has not so freely penetrated, consists of a mixture of cartilaginous and osseous matter, the cartilage being arranged in nodules, and exactly resembling that of the fœtal skeleton. The morbid growth is very closely connected with the periosteum in the whole circumference of the tibia, and at the upper part the osseous portion of the tumour is continuous with the bone. The internal part of the tibia is sound. I. 41

Presented by William Brewer, Esq.

425. Section of a Tibia, and of a large Cartilaginous Tumour surrounding its upper two-thirds. The tumour is seated entirely between the bone and the extended periosteum; the continuity of the periosteum with the investment of the tumour is distinct at the lower part. At its upper boundary the tumour borders the articular surface of the tibia, but does not encroach upon it. The cartilage is in nodules and irregular masses; it is firm, elastic, shining, greyish, like ordinary fœtal cartilage. At its upper part portions of cancellous bone are imbedded in it, and portions of similar bone have grown into most of those parts of the tumour which are in contact with the surface of the tibia. A large cavity within the tumour is irregularly bounded by nodules of cartilage, and by a coarse network of fibrous bands, the remains of partitions between portions of the tumour, the softening of which probably led to the formation of the cavity. All these tissues bounding the cavity appeared, in the recent state, soft, floeculent, and sloughing, and it was filled with brownish-yellow, putrid, decomposing fluid. The general shape of the tumour is spheroidal; its weight was twenty-four pounds. I. 288

The patient was a girl 14 years old. The tumour had been growing eighteen months; and shortly before her admission into the hospital, and probably at the commencement of the putrefaction of the contents of the cavity within it, the integuments over it began to look inflamed and dusky. On amputation of the limb, putrid gases were found diffused in the cellular tissue as high as the middle of the thigh. She died three weeks after the amputation, with signs of purulent infection.

A drawing, No. 22, is preserved.

426. Part of a Foot, with a large, soft, Cartilaginous Tumour occupying the place from which the metatarsal bone of the great toe had been removed on account of a similar growth involving it. The tumour is in two principal, and perhaps distinct, portions, invested with tough fibrous tissue, appearing loeular through the number and strength of the partitions traversing it. The cartilage is soft, yellowish, transparent, and in some parts nearly liquid; while, from other parts, it appears to have escaped in the section, leaving cavities. 35. 94

427. The Metatarsal Bone of the Great Toe of the same foot, after maceration.

* The drawings of microscopic specimens referred to as A. 1, A. 2, &c., were executed and presented by W. J. Walsham, Esq., by whom the sections were also prepared.

Its surface is nearly covered with growths of bone that radiated into the cartilage which had formed around it. 35. 95

The patient was a man about 60 years old. The tumour removed with the metatarsal bone was as large as an orange, and appeared to be simply cartilaginous ; but its cartilage was soft and jelly-like. The operation-wound healed ; but in about five months the disease reappeared at the scar, and increased rapidly. A small "cartilaginous cyst, filled with a kind of bloody jelly," formed, also, in the front of the leg, just above the ankle, and was attached to the tendon of the extensor pollicis. The patient recovered from the amputation of the foot.

Presented by Dr. Ross.

Vide No. 3262, Series L.

CALCIFYING OR OSSIFYING ENCHONDROMATA.

428. Sections of a Femur and an Os Innominatum, from which an Osseous Tumour of large size has arisen, principally from the Femur. It consists throughout of a very hard osseous substance with a compact surface and cancellous interior. It is divisible into lobes, and its surface is nodulated. There has been a fracture of the shaft of the femur, a little below the trochanter minor, which has firmly united. This fracture occurred before the growth of the tumour commenced. A much larger part of this tumour consisted principally of cartilaginous substance ; a portion of it is preserved in the following specimen. A. 133

There is a cast of the limb from which the preceding specimen was taken, No. 6.

(In Case G.)

429. Section of a Tumour consisting of nodules of cartilage connected by fibro-cellular tissue, and having specks of bone dispersed through it. It was connected with the tumour described above. I. 118

430. Masses of Osseous substance with small portions of the bones of the Pelvis upon which they had formed. The osseous substance consists of fine filaments, loosely cohering together ; it formed part of a large tumour, probably an osteo-chondroma. I. 189

431. Sections of a large Tumour, consisting of cartilage with specks and lines of bone interspersed in it. The greater part of it presents a nodular arrangement. 35. 5

432. Portion of a Femur, dried, with the surrounding muscles, among which, and with a slight attachment to the bone, the tumour last described had grown. Some pieces of the tumour, more completely ossified, remain imbedded in the intermuscular tissue. 35. 6

FIBROUS TUMOURS (FIBROMATA).

433. A right superior Maxilla, removed by operation from a girl, aged 26. The interior of the bone is filled by a firm fibrous tumour. Seven years previously a growth was removed from the alveolar process of the same bone.

The microscopic characters of the growth were those of a fibrous tumour.

See *Lucas Ward Book*, vol. ii, p. 63.

434. A superior Maxilla, with a large oval tumour, which appears to have originated in its interior, and, in growing, to have disparted and extended its walls in every direction. The tumour, elongated from above downwards, projected remarkably into the orbit, lifting up the orbital plate of the bone. It has a very dense compact texture, and a greyish basis, which is intersected by curved and reticulated shining white lines. Microscopically it consists entirely of well-formed fibrous tissue. I. 267

The patient was a man 28 years old. The growth had been observed increasing for two years before its removal. It was painless and did not affect the general health. It projected at the cheek, and into the orbit, nostril, and mouth, and displaced all the molar teeth on its own side. He recovered from the operation and was well three years after it.

Presented by Mr. White.

435. Sections of the left half of a Lower Jaw Bone, the walls of which are disparted and extended around a large oval tumour growing within them. The tumour extends from the right side of the symphysis, along the entire length of the left horizontal portion of the jaw, and about one-third of its ascending portion. It is uniformly of a very firm, dense substance, greyish-white, intersected by short shining bundles of white fibres. The investment of bone, formed for it by the extended walls of the jaw within which it grew, is complete, and might be separated from it. An appearance of softening in its centre is due to its having been perforated before removal. I. 280

The patient was a healthy-looking woman, 32 years old. The tumour ascribed to a blow, had been observed between seven and eight years, and had gradually increased without pain. Recovery followed the operation.

436. Part of the body of a Lower Jaw, and of a Tumour which extended from its angle to the place of the canine tooth, on the left side. The tumour appears to spring from both surfaces, as well as from the alveolar border of the jaw; it is intimately connected with them, and their periosteum is involved in it. It rises, with a nearly smooth oval surface, to a height of almost an inch from the jaw. Its texture is dense, tough, elastic, white, with glistening bands, like a section of fibrous cartilage. Its posterior and lower surface is covered with a thin plate of bone, which appears to have grown over it from the lower border of the jaw. 35. 92

The patient was a woman 28 years old. The tumour had been two years in progress and had seemed to spring from the socket of a tooth which was extracted on account of caries. For the first eighteen months it was painful; in its later progress much less so. The patient remained well for at least a year after the operation.

Under the microscope the tumour was found to be composed of well-formed fibrous tissue.

SARCOMATA.

ROUND-CELL SARCOMATA.

437. Portion of the upper part of a Skull, with several large lens-shaped Tumours developed between the pericranium and dura mater, and partially involving the intermediate substance of the bone. The tumours are composed of a soft, but close-textured, smooth, medullary substance, which, on its cut surface, is obscurely fibrous, as if in each tumour there were fibres set vertically upon the surface of the bone to which it is attached. 35. 1

Microscopic examination showed the tumour to be a small round-cell sarcoma.
See microscopic specimen, No. 11.

438. Section of a Clavicle, in the interior of which a firm medullary substance has been deposited in large quantity. The posterior wall is but little changed; but the greater part of the anterior wall is lost in the interior of the tumour which grew to a great extent forwards. The shaft was fractured (with only a slight force), and its portions are widely displaced without any attempt at union. I. 223

Microscopic examination showed the tumour to be a small round-cell sarcoma.
See microscopic specimen, No. 12.

439. The other Section of the same Clavicle after maceration. It shows more distinctly the characters of the osseous structure into which the anterior wall of the bone, which was chiefly involved in the growth, was changed. I. 224

From a man 60 years old. Four years before death, the growth had the aspect of a small tumour growing within and expanding the walls of the clavicle. After this, enormous masses of a similar medullary substance formed around the clavicle, and in the subcutaneous tissue and other parts of the body.

440. Section of a Clavicle. The sternal extremity is occupied, and surrounded by a small round-cell sarcoma. I. 347

See microscopic specimen, No. 13.

441. Sections of the upper half of a Humerus, and of a Round-cell Sarcoma, which occupies the place of the shaft of the bone. In one of the sections, a small portion of the diseased structure, distinct from the general mass, has protruded through the wall of the bone. In the other section, the morbid structure is covered by the articular cartilage of the head of the bone. I. 49

See microscopic specimens, No. 14.

The tumour in this instance had a constant and regular pulsation, the cause of which was not discerned in the examination of the limb. The case is related by Mr. Stanley, in the *Medico-Chirurgical Transactions*, vol. xxviii, p. 304. London, 1845.

SPINDLE, AND MIXED ROUND AND SPINDLE CELL SARCOMATA.

442. Sections of a Tumour and of the portion of the Lower Jaw in which it originated; removed by operation. The portion of the jaw comprises its whole side, from the angle to within a short distance of the symphysis. The morbid growth consists of a grey, dense, fibrous substance, originating from the alveolar border and from the outer surface of the jaw. Part of the alveolar border of the bone has been absorbed; and in this situation the morbid growth appears to extend into its body. The contiguous substance of the jaw is of an ivory-like hardness, and its cancellous texture is consolidated. I. 149

From a female aged 30.

443. Sections of a Tumour which formed in the side of the neck immediately below the seat of the operation by which the parts last described were removed. The tumour consists throughout of a firm fibrous substance. The irregularity of surface and looser texture which it presents in one situation result from the ulceration and sloughing of its substance, which commenced a short time before death. With the smaller section of the tumour is connected a part of the lower jaw: its texture is sound, but the morbid growth is closely attached to its surface. I. 150

Microscopic examination of this and the preceding specimen showed them to be spindle-cell sarcomata.

See microscopic specimens, Nos. 18, 19.

444. Part of a Lower Jaw, including one of its rami and its symphysis, imbedded in a large, firm, dense, pale and obscurely fibrous tumour, near which also are one or two smaller tumours of the same kind resting on its surface, but not connected with the bone. The tumour projects with an ulcerated surface into the side and floor of the mouth, displacing the tongue and soft palate, and rising as high as the condyle of the jaw. I. 251

Microscopic examination showed that the tumour was a spindle-cell sarcoma.

See microscopic specimen, No. 20.

This and the preceding specimen were taken after death from the patient from whom No. 442 was removed. She survived the operation about two years.

Presented by George Harrison, Esq.

445. The Base and a portion of the Spine of a left Scapula, removed with a large tumour attached to both its surfaces. A section of the tumour has been made, that portion of it being removed which lay nearest to the vertebral column: the whole length of the base of the scapula is deeply imbedded in the portion which is preserved. The tumour is of nearly oval form, between six

and seven inches in length; its surface is nearly smooth and is connected with the adjacent tissues by a thin fibro-cellular investment. On its cut surface it presents a pale, yellowish-white basis, which is intersected by a few thin partitions of fibro-cellular tissue, and is besides variously traversed by opaque white fibres. It is throughout firm, compact, elastic, and heavy, and bears a close resemblance to the fibrous tumours of the uterus, which it further resembled in yielding a large quantity of gelatine and in its microscopic structure. 35. 51

About a year before the removal of this specimen the patient, a middle-aged man, had a large firm tumour removed from beneath the base of the scapula. The wound healed, but shortly afterwards this tumour appeared and grew rapidly. After the second operation another similar tumour soon grew; and the man died, with tumours attached to the internal surface of the ribs, beneath the seat of the former operations.

Presented by F. C. Skey, Esq.

446. Sections of an elongated oval fibrous Tumour, very like the preceding specimen. The resemblance extended to the microscopic and chemical characters. 35. 53

The tumour was removed from a lady 20 years old. It was situated beneath the trapezius muscle, and was closely attached to the spine of the scapula. It had been growing two years. The patient recovered from the operation.

447. A soft sarcomatous Tumour, surrounding the upper half of the shaft of a Femur. It has a well-defined capsule. The ossified periosteum may be traced as a thin layer of bone through the middle of the section. In the middle of the upper third the whole thickness of the shaft of the bone has been destroyed by the growth.

Microscopical Examination.—The tumour presents the characters of a sarcoma. Trabeculæ of spindle cells and fibrous tissue form alveoli, which enclose numerous small round cells.

The specimen was taken from a boy aged 14 years. Eighteen months before admission to the Hospital, he became subject to occasional pain in the thigh, accompanied by slight swelling, which subsided with the pain. Ten months later pain and swelling of the thigh followed a slight blow on the part. From that time the swelling gradually increased, but was said to vary from time to time. Sudden variations in the patient's temperature occurred, it being sometimes as high as 102·6°. These symptoms led some to the opinion that the disease was necrosis. Amputation at the hip-joint was performed and the patient made a good recovery.—See *Rahere Ward Book*, vol. vi, p. 286.

See microscopic sections, No. 21.

448. Section of a Femur and of a Tumour surrounding the lower part of its shaft. The tumour consists of a mixture of medullary substance and a firm tissue like that of a fibrous tumour or fibro-cartilage with spicula of bone dispersed through it. At its posterior part are some thick-walled membranous cysts which were filled with coagulated blood. The injection of the limb has displayed minute vessels distributed irregularly through the tumour. The walls of the femur enclosed within the tumour are diseased, softened, and thinned to the extent of about two inches; and in this situation the shaft is broken, and the cancellous tissue is filled by a morbid structure similar to that which surrounds the bone. 1. 97

Microscopic Examination.—The tumour consists in great part of spindle cells.

Microscopic sections are preserved, No. 22; and a drawing, A. 5.

449. Section of the tumour last described. 1. 98

The patient was 22 years old, an opera dancer, and the disease had existed about seven months. The tumour grew rapidly and with much pain. He died shortly after amputation of the limb; and no other part was found diseased.

450. Section of the lower half of a Femur. An ossified sarcoma springs from the surface of the bone around the lower third of the shaft. The medullary canal is enlarged, especially at the lower part, where a sequestrum of cancellous tissue lies surrounded by granulations. Portions of the tumour were found to consist entirely of small spindle cells.

From a man aged 32 years. Swelling of the thigh, without pain, was noticed eight or nine weeks before his admission to the Hospital; he had received no injury to the part. Amputation of the thigh resulted in the death of the patient. Secondary growths were found on the pleuræ.—See *Abernethy Ward Book*, vol. ii, p. 84.

Microscopic sections are preserved, No. 23.

451. A section of the lower extremity of a Femur occupied and surrounded by a soft, gelatinous sarcomatous tumour, which in the recent state was of a pale pinkish colour. The tumour occupies the medullary cavity and projects outwards through large openings in the wall of the bone, which is almost completely absorbed.

The histological elements of the tumour are small spindle-cells intermingled with a large proportion of mucous tissue; the latter preponderates in the portion occupying the medullary cavity.

The specimen was removed by amputation from a man aged 20 years. Four months before admission to the Hospital he received a blow upon the inner and lower part of the femur; soon after a tender circumscribed swelling appeared at this spot. It was at first thought that the swelling might be inflammatory, but its gradual increase in size revealed its true character.—See *Pitcairn Ward Book*, vol. vi, p. 536.

Microscopic sections are preserved, No. 24.

452. The opposite section of the Femur after maceration. The wall of the bone has been almost entirely absorbed, and several delicate plates and trabeculæ of bone project outwards. Many of these were accidentally broken away.

453. Section of a Tumour and part of a Tibia. The tumour occupies the situation of the head and the upper third of the shaft of the tibia: it apparently originated in the interior of the bone, and extended the wall around it as it grew. At the upper part, the articular surfaces of the tibia, and the ligamentum patellæ may be recognized. The tumour consists in part of a white, solid, and very firm medullary substance, and in part of a more vascular and spongy substance, in which there are large cysts that were filled by a gelatinous fluid.

I. 116

From a man aged 40. The limb was removed by operation.

Microscopic Examination.—The tumour consists almost entirely of spindle cells, but in places tracts of round cells are seen.

Microscopic sections are preserved, No. 25; and a drawing, A. 4.

454. Section of a Tibia, with a very large tumour springing from the front and inner surface about the middle of the shaft. The surface of the tumour is nodulated and for the most part hard as bone. The section shows a large fleshy mass springing from the anterior surface of the tibia, and projecting forwards and downwards; it contained numerous spicula of bone: a small mass covered by a thick layer of bone also projects from the posterior surface. The bone, where surrounded by the growth, is extremely indurated, and its outline is irregular, the more so as a fracture occurred at this point, the line of which can still be distinguished.

The tumour, which was a fibro-sarcoma, consisted of immature fibrous tissue, containing very numerous round and fusiform nuclei, and some spindle cells.

The limb was removed by amputation from a woman, aged 72 years. The tumour was first noticed eight years before her admission to the Hospital. It appeared shortly after she had sustained a fracture at the middle of the leg. Three years later she again fractured the same leg lower down.—See *President Ward Book*, vol. vii, p. 76.

Microscopic sections of the tumour are preserved, No. 26.

Vide No. 3305a, Series L.

SARCOMATA CONTAINING MYELOID CELLS.

455. Portion of the upper part of a boy's Skull, and of a large tumour involving it, and pressing inwards upon the brain. The section was made transversely from ear to ear, through the skull, tumour, and brain. The tumour, half of which is here shown, formed on the exterior of the skull a layer from one to two inches thick, which covered the whole vertex, from the occipital spine to

the coronal suture, and from one squamous suture to the other. Within the skull it formed a layer, in about two-thirds of the same extent, and of the same general shape, gradually increasing its depth and thickness from its borders to its central part. That part of the tumour which is external to the skull has a nearly uniform, dense, firm, and elastic texture of dull yellowish colour mingled with white; it appears neither lobed nor granular, nor fibrous. The intra-cranial portion appeared in the recent state more plainly than it does now, soft, and medullary, with a fibrous grain vertical to the surface of the skull. It was much more vascular than the extra-cranial portion, had a dark purple or livid colour streaked with pale grey and pink, and near the skull was intersected with white bands of fibres of the dura mater.

The microscopic characters of both portions of the tumour agreed, in all essential respects, with those of the fibro-plastic tumours (myeloid sarcomata).

The scalp adheres closely to all the parts of the tumour that it covers; but at the centre of the vertex is destroyed by a wide and deep ulcer penetrating the substance of the tumour. The pericranium is completely involved in the tumour and cannot now be traced. The texture of the parietal bones, as shown more plainly in the next specimen, is expanded and made irregularly cancellous, by the formation of substance within them like that of the tumour on their surfaces; and from both their surfaces fine growths of bone extend into the corresponding parts of the tumour. The dura mater is involved in the substance of the intra-cranial portion of the tumour, but is less completely lost sight of than is the pericranium; parts of the falx and of the walls of the longitudinal sinus may still be traced. This intra-cranial part of the tumour is deeply imbedded in the cerebral hemispheres, and adheres closely to parts of their surfaces; there is no confusion from infiltration of the brain substance, but that of the hemispheres appears compressed and absorbed. On the left side a large cavity, which contained pus, exists between parts of the tumour and of the surface of the brain. It was lined with vascular granulations.

I. 293

456. The other half of the upper part of the same Skull, macerated and dried. It shows more perfectly the expanded state of the portions of bones involved in the tumour, and the new bone grown up from their surfaces. This new bone forms a layer from one to four lines in thickness, and is composed of fine lamellæ and fibres, the chief of which are set almost vertically on the skull, and of which the general shape and arrangement are exactly like those of normal cancellous tissue or of light bone formed in periosteal inflammations. I. 294

The patient was a farmer's boy, 15 years old: the tumour was of nearly three years' duration, and was ascribed to repeated blows on the head. It increased regularly, and in the last three months was attended with severe pains in the head, and with gradually increasing imperfection of walking and other movements, and of the sight and hearing. Two days before death convulsions ensued, and these were followed by coma. In addition to the appearances already described, extensive suppuration was found in the tissue of the pia mater.

457. Section of the anterior part of a Lower Jaw, and of a tumour formed within it. The anterior and posterior walls of the jaw are disparted, and form a thin layer, like a capsule of bone, around the tumour which has grown between and gradually expanded them. Their tissue appears unchanged. The tumour is of oval form, and measured about two and a half and one and a half inches in its chief diameters. Its substance is generally firm and compact, without any distinct fibrous or other texture; immediately after removal it had a greyish tinge, suffused with deep crimson, brownish and purple blotches; it presented the microscopic characters of a "fibro-plastic" tumour (myeloid sarcoma). The cut surface of the tumour presents the sections of several cysts which were irregularly placed within its substance, and were filled with clear yellowish fluid.

I. 273

The patient was a lad 18 years old. The tumour had been observed gradually increasing, without pain, for eight months, and projected into the mouth through one of the alveoli. The portion of the jaw that was removed included the first true molar tooth on the left side, and the first bicuspid on the right, all the intermediate teeth being in their places. The patient remained well for more than four years after the operation.

458. Section of the forepart of an Upper Jaw, with a tumour having the same general and microscopic characters as that last described. The tumour seated within and above the alveolar part of the jaw has separated and extended, in its growth, the anterior and the palatine walls of the bone, which form a kind of bony investment to it. I. 274

The patient was a girl 20 years old, of healthy appearance. The tumour had been observed as a projection in the left nostril, ten weeks before it was removed.

Presented by Benjamin Barrow, Esq.

459. Portion of an Upper Jaw, including nearly the whole of its front wall, extended over a large tumour, which presented the same general and microscopic structures as the two preceding, except in that its substance had almost uniformly the colour of voluntary muscle. Nearly the whole of this colour was quickly discharged as if by bleaching, when the tumour was immersed in alcohol. It now presents a uniform pale colour, and a firm, compact substance, in which portions of cancellous bony tissue are irregularly scattered. I. 275

The patient was 22 years old. Growths, like common epulis, had been thrice removed from her right upper jaw before the growth of this tumour was observed. The last of the three growths extended through an alveolus into the cavity of the antrum, which it nearly filled. All, however, appeared to be removed, and the wounds of the operation healed soundly. Nine weeks afterwards, this tumour in the right upper jaw-bone was observed, expanding it in all directions. It regularly increased, and about two months later a similar tumour appeared in the left upper jaw-bone also. Both tumours grew rather quickly. Six months after the appearance of the first of them, the greater part of the jaw-bone was cut away (including the part here preserved), and the rest of the tumour, which appeared to fill the whole interior of the jaw-bone was removed piecemeal. The wound healed soundly, and during the nine months following the operation no reproduction of the growth had taken place; the tumour in the left upper jaw-bone had somewhat diminished and become harder, and two small swellings which had long existed on one of the parietal bones, disappeared.

460. Sections of a Tumour with the portion of the Lower Jaw in which it originated; removed by operation. The portion of the jaw taken away includes one side of it, from the angle to within a short distance of the symphysis. Part of the mucous membrane of the mouth, unaltered in structure, is extended over the tumour. The tumour, originating in the cancellous texture of the jaw, is surrounded by a thin shell of bone, formed by the remains of the walls of the jaw. The tumour consists of a solid and very compact fibrous substance of a greyish colour, irregularly intersected by white fibres. I. 148

From a female aged 14.

Microscopic examination showed the tumour to be a spindle-cell sarcoma, containing many myeloid cells.

See microscopic specimen, No. 28.

461. The front of the Lower Jaw of a child, which was removed by operation, on account of a tumour arising in the cancellous texture of the bone, and thence protruding into the mouth. In the progress of the operation, the front of the jaw separated into an upper and a lower portion. With the upper portion there is a part of the tumour, which was lodged in a cavity of the bone formed by the absorption of its cancellous texture and by the separation of its anterior and posterior walls. The tumour consists throughout of a red and fleshy mass, resembling a piece of lacerated spleen. I. 23

Microscopic examination showed the tumour to be a spindle-cell sarcoma, containing many myeloid cells.

See microscopic specimen, No. 29.

462. A Myeloid Sarcoma springing from the upper extremity of the Humerus. The deltoid muscle is reflected, exposing a large, soft, brain-like tumour, which surrounds the head and upper third of the shaft of the humerus. It is covered by a definite capsule. The growth extended forward beneath the pectoralis major on to the wall of the thorax, which it penetrated; it fills the axilla surrounding the large vessels and nerves, and extends backwards into the substance of the teres minor. Occupying its centre is a portion of the shaft of the humerus about one inch long, which is separated from the head above by a considerable interval, and from the lower portion of the shaft by a fracture. The enclosed portion of bone is rough, eroded, and infiltrated. The shoulder-joint is not involved.

Microscopic Examination.—The tumour is composed of large roundish or oval cells of the most various size and very irregular shape, with little or no intercellular material. Myeloid cells are thickly scattered in some parts of the tumour. A nucleus is visible in the majority of the cells; the larger ones are multi-nuclear. A band of immature connective tissue, containing small round nuclei, is here and there cut across.

From a man aged 48 years. Sixteen months before his death he became subject to cutting pain in the shoulder; nine months later a swelling appeared. He gradually lost power of movement in his right hand, the fingers tingled and the right pulse at the wrist was smaller than the left; the forearm was œdematous. Crepitus was felt on moving the upper arm. The supra-clavicular glands were enlarged.

Post Mortem.—The tumour was found to have made its way through the wall of the thorax involving the apex of the right lung. Numerous firm secondary deposits were scattered throughout the lungs and liver.—See *Luke Ward Book*, vol. ix, p. 250.

Microscopic sections are preserved, No. 30.

463. A large mass of sloughing and bleeding Sarcoma, connected with the bone, axilla, and the adjacent glands, which formed after the removal of the head of the humerus with a myeloid sarcoma about the size of an infant's head, and in most parts encapsuled by a thin layer of bone. This growth consisted of myeloid and spindle cells. The shortening of the humerus in the preparation is due to the above-mentioned removal of its upper third. Its shaft is healthy, and is united to the lower edge of the glenoid cavity by a small ligamentous band permitting of free movement. I. 304

The growth preserved consists of spindle-cells.

The parts were obtained from a woman, aged 33, who, six years before her death, was supposed to have sustained a fracture or dislocation of the head of the humerus. To this succeeded permanent loss of motion, and gradual enlargement about the part. This growth was spontaneously arrested during four years. Subsequently resection of the upper part of the humerus, of the tumour, and of some diseased glands was resorted to. The operation was recovered from, but the disease was rapidly reproduced in four different situations. She died four months after the section, from an enormous mass of sloughing and bleeding cancer, connected with the bone, the axilla, and the adjacent glands.

Microscopic sections of the growth are preserved, No. 31; and a drawing, A. 11.

Presented by Mr. J. Hutchinson, by whom the case is fully related in the *Transactions of the Pathological Society*, vol. viii, p. 346.

464. The Fore Finger of a man which was removed on account of the myeloid tumour, which occupies the first phalanx and is seen in section.

It had been growing three years. I. 339

Presented by A. Winkfield, Esq.

465. Section of the lower end of a Femur, in which nearly all the cancellous tissue within the condyles and for a short distance up the shaft is removed, and its place occupied by a mass of brain-like medullary substance. The greater part of this substance is nearly white, but there are many spots in it of a deep red colour, from effused blood—a cyst in process of formation; and at the upper part is a section of a small cavity which was filled by a soft gelatinous material. The growth of the mass has expanded the internal condyle and the posterior part of the femur into a large round sac, of which the walls are

partly formed by the articular cartilage and the periosteum. The patient, a man aged 27 years, from whom the limb was removed by amputation, had suffered from the disease for twelve months. I. 212

Microscopic examination shows that the tumour is a myeloid and round-cell sarcoma.
Microscopic sections are preserved, No. 32 ; and a drawing, A. 8.

466. A Section of the lower part of a Femur, and of a brain-like Tumour, which has grown within the condyles and has extended them in a large thin-walled cavity. The tumour projects chiefly backwards and laterally ; a part of it is covered by the articular cartilage of the femur, which is extended over it, but in the middle, between the condyles, the cartilage is perforated by the morbid growth penetrating into the knee-joint in front of the crucial ligaments. I. 46

Microscopic Examination.—The tumour consists of spindle and round cells, with myeloid cells thickly interspersed throughout it.
Microscopic sections are preserved, No. 33 ; and a drawing, A. 6.

467. Sections of the lower part of a Fibula, with the Tibia and Astragalus. The walls and periosteum of the lower end of the fibula, including the malleolus, are extended into a thin osseous and fibrous capsule, by the internal growth of a tumour composed partly of cartilage and partly of fibro-plastic tissue (myeloid sarcoma). The tumour is of oval shape, and measures about three inches by two; its surface is knobbed, and exactly fitted to the interior of the bone extended around it, yet not so firmly united but that they could be cleanly separated, as in the upper section here shown. The cut surface of the tumour displays the greater part of its mass formed of pale greyish, glistening cartilage, while the remainder, mingled with the cartilage in no regular arrangement, is pale pinkish-white, more vascular, softer, and obscurely filamentous. I. 289

The patient was a young man. The tumour had grown slowly, and pulsated distinctly, probably with impulses communicated to it from vessels in its interior ; for there were no large vessels external to it from which extensive pulsations could be derived.

Presented by Langston Parker, Esq.

468. A Section of the upper part of a Tibia, and of a large Medullary Tumour which has formed within it. The tumour consists partly of a soft, brown, fibrous-looking substance, and partly of coagulated blood ; and there are some small cysts in it. A thin crust of the expanded walls of the bone surrounds the tumour. Upon the upper part of it, in the situation of the articular surface of the tibia, there is a deep excavation which lodged one of the condyles of the femur. The diseased structure appears to have originated in the cancellous tissue of the head of the tibia, and is exactly circumscribed; the shaft below it is healthy. I. 85

Microscopic Examination.—The tumour consists of spindle and round-cell tissue with myeloid cells thickly interspersed in it.
Microscopic sections are preserved, No. 34.

469. A large round-cell Sarcoma nineteen inches in circumference at its greatest diameter, affecting the upper end of the tibia and, slightly, the lower end of the femur, with the crucial ligaments.

The tumour presents numerous cysts with smooth lining membranes, which contained when fresh a yellowish or chocolate-brown viscid fluid.

It consists of a hard part composed of earthy matter deposited here and there in considerable amount, but with no indication of true ossification, and a soft part presenting the characters of a round-cell sarcoma with a few myeloid cells, and many cells of irregular form and size. 35. 147

See *Abernethy Ward Book*, vol. ii, p. 337.

470. The upper third of a Tibia divided vertically. Projecting upon its inner aspect is a considerable tumour, covered by thickened periosteum. The growth extends half-way across the head of the bone, taking the place of its osseous tissue. Above, it reaches to, but does not involve, the articular cartilage. Below, it extends on the outer side of the bone, between the compact wall and the periosteum. The cancellous tissue around is condensed.

The tumour is composed of a firm, tough material, of a dull grey colour, traversed by numerous blood-vessels. It is formed, chiefly, of cells having the character of those observed in malignant growths, mingled with others of the myeloid variety. During life it was distinctly pulsating. I. 306

The patient, a girl aged 17, had undergone the operation for tying the femoral artery. Subsequently there was profuse hæmorrhage from the wound. Death resulted from the intercurrence, during convalescence, of an attack of continued fever. The progress of the disease was in no way affected by the ligature of the artery.

The case is related in the *Hospital Reports*, vol. vi, p. 381.

471. Section of the upper part of a Tibia, within the head of which a nearly spherical tumour, about four inches in diameter, has grown. The greater part of the substance of the bone has been absorbed during the growth of the tumour, round which its remains are extended in a thin wall of bone and periosteum. The articular surface is unchanged, but nearly all the layer of bone beneath the cartilage is absorbed. The chief part of the tumour consists of close-set, thin-walled cysts, the cavities of which were filled with bloody fluid. Other parts, around and between the cysts, consist of soft, opaque-white, brownish and yellow substance variously tinged with blood. A few bands and thin plates of bone traverse the space thus filled with cysts and solid growth. The upper part of the shaft of the tibia appears healthy, which is immediately below the part extended round the growth.

The microscopic structures in the solid parts of the tumour, and in the walls of many of the cysts were chiefly many-nucleated cells, and spindle cells, like those characteristic of myeloid or fibro-plastic tumours. I. 298

The patient was a woman 24 years old. The first sign of the disease was severe pain in the head of the tibia. This was observed eighteen months before the removal of the limb, and after it had existed ten months a swelling appeared, which regularly increased; the pain rather diminished, but the limb became constantly more feeble and unable to support the body. Recovery followed amputation.

472. Section of the lower part of a Tibia and of a Tumour contained within it. The tumour consists of a brain-like substance, with blotches of blood effused in it, and is almost completely surrounded by a thick osseous lamina which is continuous with the wall of the tibia. It may be presumed that the morbid deposit commenced in the interior of the bone, and that, as it grew, so also the bone grew around it, with internal absorption and external deposit of new bone, and thus formed the osseous wall. The arteries of the limb are injected; some of their branches pass through the morbid growth. I. 159

The microscopic characters of the tumour are those of a myeloid sarcoma.
Microscopic sections are preserved, No. 35; and a drawing, A. 10.

473. The other half of the Tibia and of the Tumour last described. A portion of skin is here left, in which there is ulceration with a fungous growth originating in the morbid structure. The cavity immediately above the cartilage of the ankle-joint was filled by soft medullary substance. I. 160

The limb was amputated by Mr. Hey, of Leeds. This and the preceding specimen were presented by Joseph Swan, Esq.

Vide Nos. 3312, 3313, Series L.

CALCIFYING OR OSSIFYING SARCOMATA. (Osteo-Sarcomata, Osteoid Tumours.)

474. A section of the lower half of a Femur, and of an Osteoid Tumour (osteo-

sarcoma), which has formed around it. The tumour consists almost entirely of a solid, uniform, and very dense osseous substance. The medulla cavity of nearly all that part of the bone which is surrounded by the tumour is filled by a similar substance, and about the condyles, the walls of the femur being absorbed, the morbid growths within and without form one mass. A part of the exterior of the tumour is composed of a soft, fatty-looking substance. I. 108

Microscopic Examination.—The tumour consists of a reticulum of homogeneous intercellular substance, enclosing small round cells.

Microscopic sections are preserved, No. 36; and drawing, A. 14.

475. The other Section of the Femur and Osteoid Tumour last described. By maceration, the soft matter of the tumour has been removed, leaving only the hard, dense, and white osseous substance around and within the bone. The outer surface of this portion of the tumour is nodulated, and portions of it have a fibrous texture like that of pumice-stone. In the lower part of the bottle are several of the inguinal and lumbar lymphatic glands from the same side of the body as the tumour. They are converted into an osseous substance similar to that of which the tumour is composed. I. 109

476. The Femoral Artery, together with several Bony Tumours which occupied the situation of the lymphatic glands in the popliteal space and groin of the patient from whom the two preceding specimens were taken. The tumours consist of a hard osseous substance, which is displayed by a section of one of them. The femoral artery is sound, but its popliteal portion is compressed and altered in its course by its connection with the diseased glands. The ligature upon the artery, about three inches below the origin of the profunda, was placed around it in consequence of the tumour in the ham having a pulsation and other characters like those of an aneurism. I. 110

The minute structure of the growth in the lymphatic glands resembles exactly that of the primary tumour.

See microscopic sections, No. 37; and a drawing, A. 15.

The patient was a man 30 years old. The swelling seemed to have its origin in a fall on the right knee; it began at the front, and gradually extended round the lower part, of the thigh. It pulsated like an aneurism, and when a part of it was punctured arterial blood flowed. The femoral artery being tied, the pulsation ceased and the tumour for a time diminished; but it afterwards again enlarged, and the patient died exhausted. The femoral artery was compressed and displaced by the diseased glands. The case is recorded by Mr. Stanley, in the *Medico-Chirurgical Transactions*, vol. xxviii, p. 305, 1845.

477. Section of a Femur, of which the lower half is surrounded by an Osteoid Tumour (osteo-sarcoma). The tumour extended around the whole circumference of the femur. It has an elongated oval form, is thin where it abuts on the articular margin of the bone, but, in the rest of its extent, rises to between two and three inches from the surface of the shaft. The periosteum appears to be involved in the tumour, and the popliteal artery and vein run through it near its surface. The walls of the femur appear thickened and hardened, and large portions of morbid substance, like that which forms the external portions of the tumour, exist in the cancellous tissue and medullary canal. The greater part of the substance of the growth, both without and within the walls of the bone, consists of a very firm, dense, and compact tissue, pale yellowish, and obscurely fibrous; that part which is attached to the femur is chiefly osseous, its tissue having peculiarities which are better shown in the following specimen. The outer surface of the tumour is unequal and knobbed, and a few portions of similar substance lie adjacent to, but distinct from, the chief mass. I. 269

Microscopic Examination.—The tumour consists of small round cells and homogeneous or indistinctly fibrillated intercellular substance having a reticular arrangement.

Microscopic sections are preserved, No. 38; and a drawing, A. 12.

478. The other section of the same Femur dried after maceration. The osseous parts of the tumour appear as irregular outgrowths from the femur, or as deposits on its surface. On their surfaces they are brittle, lamellar, and in parts like pumice; more deeply, the chief growths are hard, very compact, and ivory-like. Similar formations of hard bone occupy a portion of the cancellous tissue of the shaft, and its walls in the corresponding situation are similarly hard and ivory-like. In other parts, the walls of the shaft are more porous than is natural, as if they had been abnormally vascular. I. 270

479. Section of the upper Third of the same Femur. In the cancellous tissue near its great trochanter there is a small circumscribed mass of fibrous-looking substance, like that of which the greater part of the tumour in No. 477 is composed. I. 271

480. Section of a mass of inguinal Lymphatic Glands, taken from the same patient as the three preceding specimens. They are greatly enlarged, and their proper tissue is replaced by a very firm and compact pale substance, which is, in parts, obscurely fibrous, and altogether resembles very closely the principal mass of the tumour round the femur. The femoral artery and vein pass through the middle of the diseased glands. I. 272

The four preceding specimens were taken from a man 45 years old, of unhealthy aspect. The tumour round the femur had been observed for five months, and was so painful that he solicited the removal of his limb, though dissuaded on account of the disease in his inguinal glands. He lived two months after the amputation, and, in addition to those shown in Nos. 479 and 480, masses of substance resembling the tumour round the femur were found in the place of other inguinal and lumbar glands, and in the lungs. In many instances these masses contained osseous as well as the apparently fibrous tissue. The case is related by Mr. Stanley in his *Treatise on Diseases of the Bones*, p. 168.

481. Section of the lower half of a Femur surrounded by an osteo-sarcoma. The whole circumference of the shaft, between the periosteum and its walls, is enveloped by the malignant growth, which, in a layer from half an inch to nearly two inches in thickness, forms a large firm tumour of elongated oval shape. The greater part of the tumour is almost pure white, very firm, and compact; but in the parts nearer to the bone, it is extensively osseous, and the greater part of the osseous tissue of the growth appears to have extended into it from the surface of the shaft on which it rests. To the same extent in which the femur is thus surrounded with the growth, its medullary canal is filled with hard, white, and finely porous bone, formed, apparently, by the almost complete ossification of the new growth. Between the laminæ of the walls, also, a similar substance exists, separating them; and at the lower part so altering them, that the morbid structures around and within the shaft are combined in a continuous mass. The epiphysis is healthy. I. 295

The microscopic structure of the soft parts of the tumour is that of a spindle-celled sarcoma. The osseous substance was true bone with well-formed lacunæ. The patient was a girl 12 years old.

Microscopic sections are preserved, No. 39; and a drawing, A. 13.

482. The other portion of the same Femur, macerated and dried. It shows more perfectly the character of the finely porous, hard, but very friable bone formed in the new growth. I. 296

Vide also No. 517 *et seq.*, p. 75.

MELANOTIC TUMOURS.

483. Sections of Lumbar Vertebræ with Melanotic matter deposited in the cancellous texture of their bodies. I. 190

484. Sections of a Rib with Melanotic matter deposited in its interior. I. 191

485. Portions of a Parietal and a Frontal Bone displaying Melanotic matter deposited in the diploe. In all these specimens the melanotic matter is deposited in circumscribed spots, like so much black pigment, in the bones. It does not form tumours, nor does the tissue of the bone in which it lies appear at all altered. I. 192

The three preceding preparations were taken from a woman, from whom the tumour, No. 3315 in Series L, was removed.

CANCERS INVOLVING BONES.

EPITHELIAL CANCER.

486. Section of a Leg, exhibiting a soft, vascular, warty growth from its front part. The base of the growth is consolidated with the periosteum, which, for some distance above and below, has become soft and spongy and has its connection with the bone loosened. The bone itself is healthy, except that there has been an irregular ulceration of its external surface. I. 42

487. Portions of the Tibia and Fibula, from the leg last described, more plainly showing the ulceration of their anterior surfaces. I. 42A

From a woman 35 years old. She received a blow on the shin when 10 years old, which was followed by abscess and discharge of small pieces of bone. The parts healed and remained well for many years; but again abscess formed, and again healed; and after this had been several times repeated, the growth here shown sprouted out, and, the patient's health failing, the limb was removed.

488. Section of a Tibia, with the soft parts covering it, exhibiting the effects of Epitheliomatous Ulceration. The section was made longitudinally through the middle of the tibia. The other half of the tibia and the fibula are in the next preparation. By viewing the two preparations together, it will be seen that the ulcerative process has extended completely through the body of the tibia, in a great part of its length, and has reached the fibula, as is evinced by the peculiar excavated appearance of its surface. No attempt has been made to restore the lost bone; there is merely a slight deposit of bony matter upon the surface of the fibula, opposite to that which is in progress of ulceration. The interosseous ligament is in part converted into bone. The integuments around the hollow which has been left by the ulceration are much changed in structure; they are swollen, and the margins of the hollow are formed by very vascular, coarse, and hard, warty granulations. I. 29

489. Macerated portions of the Tibia and Fibula, referred to in the preceding description. I. 30

They were taken from a man 53 years old. Thirty years before the amputation of the limb, a heavy piece of timber fell on his leg: he recovered from the injury, and was well for twenty years, when he had a second blow on the same part, which was followed by ulceration of the integuments, and the discharge of small pieces of bone. The ulceration extended in both width and depth, till the limb was removed. The principal arteries of the limb were ossified.

490. Lower end of a Tibia, invaded by a new growth, probably Epithelioma. The integument covering the bone presents the appearances characteristic of this form of cancer: it is infiltrated, irregularly ulcerated, the base of the ulcer being covered by fungous granulations. The ulceration appears to have extended through the skin and exposed the bone, the surface of which has been extensively destroyed, and an oblique fracture passes through it at this point. The lower end of the bone nearly as far as the articular surface is infiltrated throughout by the morbid growth and is of a yellowish-white colour, soft and crumbling. The upper fragment is invaded to a slighter extent. I. 78

The history of the case is unknown.

491. Section of a Tibia with a vascular Malignant Growth springing from its cancellous texture, the internal surface of its posterior wall, and the surrounding soft parts. I. 124

492. The other Section of the Tibia last described, together with the Fibula. The tibia exhibits the destruction of a portion of its shaft, and new bone is thinly deposited upon the surrounding surface of the tibia and fibula. I. 125

493. Section of the lower part of a Tibia and of a Malignant Growth from the integuments, such as probably preceded the destruction of the bone in the preceding specimen. I. 126

A model is preserved, No. 12.

494. Section of a Tibia, the other half of the preceding specimen. The periosteum has been in part separated from the bone for the purpose of showing its altered state, and that the bone is sound.

The periosteum is increased in thickness and of a soft flocculent texture; and the morbid growth, which, as the preceding specimen shows, apparently originated in the skin, is here traced to the periosteum. The principal part of the growth is composed of close-set groups of vascular, leaf-like, and warty granulations bounded by an elevated abrupt margin, beyond which the skin is nearly healthy. I. 127

A model is preserved, No. 11.
Vide also Nos. 535, 536.

MEDULLARY CANCER.

495. Section of a Frontal Bone, with numerous lens-shaped Tumours, of various sizes from a line to two inches in diameter, thickly scattered through its substance. They grow from both surfaces, and from the substance of both tables; there were also several in other parts of the skull, and some on the dura mater. The tumours consist of a soft medullary matter, and in many of them delicate osseous fibres, standing vertically on the surface of the skull, are embedded. In the situation of the largest tumour, parts of which grow from corresponding portions of both tables of the skull, a similar medullary substance is diffused through the diploe. I. 248

The microscopic structure of the tumour is that of medullary cancer. It consists of an alveolar stroma of fibrous tissue, enclosing epithelial-like cells, sometimes arranged like an epithelial lining around the margin of the alveoli.

Microscopic sections are preserved, No. 41; and a drawing, A. 22.

496. Another Section of the same Frontal Bone, macerated and showing more plainly the osseous portion of one of the tumours, and the altered state of the diploe where the medullary matter was deposited. I. 249

497. Another portion of the same Skull. A. 79

(In Case G.)

498. Section of a Tumour occupying parts of the seventh, eighth, and ninth ribs of the left side. The tumour is composed of a highly vascular medullary substance, in which there are some cysts that were filled with serous fluid, and a few small masses of coagulated blood. The osseous substance of the ribs appeared to be expanded within the tumour, which in several parts presented small points of bone. The cartilage of one of the ribs is completely surrounded by the morbid structure, but is itself unaltered. I. 203

Microscopic Examination.—The tumour presents the characters of a medullary cancer.

Microscopic specimens are preserved, No. 42; and a drawing, A. 20.

499. Parts of three Ribs, around and within two of which Medullary Cancers

have grown. The principal growth is nearly spherical and about three inches in diameter. It appears to be composed of soft cancerous substance, with some portions of cartilage, and, in parts, a delicate osseous structure. The rib cannot be traced in it. 35. 103

The patient was an adult male. The tumours had been observed for several years; but they had scarcely enlarged till shortly before death, when they rapidly increased, and numerous medullary tumours appeared about them and in more distant parts.

500. A Section of the Sternal End of a Clavicle and of a Medullary Cancer connected with it.

The tumour had been observed for nine months, in the first six increasing gradually, and for the last three months rapidly. The parts were removed by operation from a lad. He made a good recovery, and when he left the Hospital was able to use the arm well.

500A. Section of a Humerus, around the middle of the shaft of which a firm obscurely fibrous medullary cancer has formed. Within the tumour the texture of the humerus, apparently infiltrated with medullary matter, is soft and brittle, and was broken during life by a slight force. The disease extends for a short distance into the medullary canal above and below the fracture, and a small round mass of new growth, like that investing the shaft, is embedded on the inner surface of the wall. I. 250

From an old lady who had suffered for some months from pains like those of rheumatism in the arm. She died shortly after the fracture of the humerus.

See microscopic sections, No. 43; and a drawing, A. 19.

Presented by Herbert Evans, Esq.

501. Section of an Ilium and of a Medullary Tumour covering a large extent of both its surfaces and extending through its substance. The tumour is of oval form, and reaches from the crest of the ilium to near the margin of the acetabulum. It is composed of a soft, spongy, and flocculent, reddish medullary substance in which a few small cysts are scattered. It is covered in by the thickened periosteum of the ilium. At its centre the substance of the ilium is irregularly broken and absorbed, so that here the tumours on each side of the bone are connected into one mass by the morbid substance diffused through its texture. Portions of the iliacus and gluteus medius muscles are left connected with the periosteum, over which they were spread out in the growth of the tumour. I. 235

502. Another Section of the same parts. A portion of the tumour has been so removed as to show the surface of the wall of the ilium on which it rested, and parts of which are absorbed in minute round holes and irregular spaces, through which the growth without appears to dip in, and be connected with that within the ilium. I. 236

503. Another Section of the same Ilium macerated, to show the same partial absorption of its walls, and the other changes which it has undergone by the growth of the tumour. I. 237

504. Portion of the Periosteum of the same Ilium, with fragments of the Medullary Tumour, held together by fibrous bands, cords, and blood-vessels, somewhat like those of an erectile tissue. These pass from the inner surface of the periosteum, intersecting the substance of the tumour. I. 238

505. A Medullary Tumour, removed from the arm of the patient from whom the four preceding specimens were taken. It is of elongated oval form, soft and spongy in its texture, and has a few cysts scattered through it. Its proper colour is pale and nearly white; but it is blotched with many spots of vascularity and effused blood. It is invested by a thin fibrous capsule, with which a part of the brachial artery and median nerve are closely connected with it. I. 239

In minute structure the tumour consists of delicate alveoli of connective tissue enclosing epithelial-like cells.

Microscopic sections are preserved, No. 44 ; and a drawing, A. 21.

506. The lower part of the Aorta and the Iliac Arteries of the same patient. The left common iliac artery was tied three days before death. Its internal and middle coats are cut through by the ligature ; above the line of section is a portion of a large clot which had formed above the ligature. I. 241

The patient was a man 42 years old. The tumour in the arm had existed for ten years, and had not grown for three years. The tumour of the ilium had been growing rather quickly for about a year. It presented a distinct, deep, heavy pulsation, a bruit, and many other signs like those of an aneurism ; the common iliac artery was therefore tied. The patient died on the third day after the operation with suppuration in the track of the wound. The case is recorded by Mr. Stanley in the *Medico-Chirurgical Transactions*, vol. xxviii, p. 317. London, 1845.

A portion of the heart, containing a small medullary tumour, is preserved in Series VII, No. 1287.

507. The upper half of a Femur, around which there is a thin, flat, nodulated, medullary growth, of a soft, spongy, and obscurely-fibrous texture. The shaft at the part enclosed by the diseased structure was broken by a slight force. Its texture at this part appears soft, and is perforated by many small apertures. I. 230

Microscopic Examination.—The tumour consists of a fibrous stroma, forming alveoli, which are crowded with epithelial-like cells. From a woman 43 years old, whose right breast had been removed with a medullary tumour in it, three months before death.

See microscopic sections, No. 45 ; and a drawing, A. 18.

508. Section of a Tibia, and of a firm white medullary cancer, which covers a large portion of the anterior surface, and nearly encompasses the rest of the shaft, and from which portions, extending through the front wall, are continuous with a similar growth occupying the medullary tube, and protruding through the posterior wall. I. 279

From a man 43 years old, who had been for five years subject to severe hæmaturia. This growth was observed, gradually increasing, for about a year previous to his death. A growth of similar substance from the left brim of the pelvis was connected with the side of the bladder, and had abraded its inner surface. The case is detailed in the *Proceedings of the Pathological Society*, Session 1847–8, p. 324.

Microscopic Examination.—The tumour consists of a fibrous stroma having an alveolar arrangement : the alveoli contain large cells.

Microscopic sections are preserved, No. 47 ; and a drawing, A. 16.

Presented by William Kingdon, Esq.

SCIRRHOUS CANCER.

509. Part of the Skull of a man who died with Scirrhous Cancer of the breast. The place of the right ala of the sphenoid bone, and of small portions of the bones adjacent to it, is occupied by hard, greyish, cancerous substance, which nearly retains the shape of the bone that it has involved. Similar cancerous substance covers, with a thin granulated layer, parts of both surfaces of the dura mater, the tissue of which also appears similarly diseased. I. 292

The patient was a spare, sallow man, 45 years old. The cancer of the breast had existed for five and a half years before his death, and numerous cancerous tubercles lay in the skin around it. Paralysis of the right facial nerve existed during the last six months of his life, and in the last three months was attended with protrusion of the eye, and chemosis of the conjunctiva.

510. Sections of the Humerus of a man who died with Scirrhous Cancer of the mammary gland. Large portions of the medullary cavity are filled with a compact, very firm, greyish substance, like that of the common forms of scirrhous cancer. Where this substance is, the medulla and the cancellous bone of the interior of the humerus have completely disappeared. The walls of the bone are also, in some parts, thinned, and in some destroyed and penetrated

by the cancerous substance growing within them, and then protruding through them. The bone immediately bounding the cancerous substance appears healthy: and the borders of all the cancerous masses are well defined. I. 290

The patient was a strong muscular man, in whom a hard cancer of the breast appeared twelve months before death. In the last two months of his life both humeri were fractured by slight force. Cancerous disease, like that here shown, existed in the sternum, and in several dorsal vertebræ. *See* Series V, No. 1131.

Microscopic Examination.—The greater part of the tumour consists of fibrous stroma, which in the more recently formed portions forms alveoli containing large cells.

Microscopic sections are preserved, No. 48; and a drawing, A. 25.

511. Section of the lower extremity of a Humerus, surrounded and infiltrated by a Tumour, which is in parts ossified.

On examination with the microscope the tumour was found to be a well-marked scirrhous cancer.

From a man, aged 42 years, who was attacked with pain in the hand and elbow six months before admission to the Hospital, followed by ovoid swelling about the elbow.

Death took place from pleurisy. Small masses of cancer were found in the lungs, liver, and kidneys.—See *Abernethy Ward Book*, vol. ii, p. 74.

Microscopic sections are preserved, No. 49; and drawings, A. 23.

512. Sections of the upper part of a Femur. The medullary canal of the bone is filled by firm fibrous substance. Around this substance the walls of the bone are absorbed and converted into a loose flocculent texture. In the upper part of the specimen this change has extended completely through the bone: in the lower part it appears to be commencing upon the inside of the bone contiguous to the fibrous substance filling the medullary canal. The head and neck of the femur, and the os innominatum of the same side, had undergone similar alterations in structure. I. 152

From a man aged 55.

Microscopically the growth within the medullary canal consists, for the most part, of well-formed fibrous tissue, forming alveoli containing epithelial-like cells—scirrhous cancer.

A microscopic section is preserved, No. 50.

TUMOURS OF BONES OF UNCERTAIN NATURE.*

513. Section of a Humerus, with a Tumour which was attached to it. There is a portion of skin connected with the tumour and the surrounding muscles; and the cicatrix in the skin is the result of an operation which was performed for the removal of a tumour which occupied the situation of that here shown. The disease being reproduced, it was deemed necessary to amputate the arm at the shoulder-joint. Both the arteries and veins are filled with red wax, which, having been injected into the brachial artery, returned freely by the veins. Part of the tumour is situated in the biceps muscle, the other part of it extends to the bone, on the outer surface of which there is an irregular cavity, in which a small portion of the tumour was imbedded. From this cavity several small canals deeply penetrate the bone, and the medulla in this part of the bone was softer and more vascular than elsewhere. On one of its surfaces the tumour has a very close connection with the vessels and nerves of the limb. The tumour is soft and of a medullary character. I. 154

From a female aged 25 years.

514. An innominate Bone, the seat of a new-growth. The bone is infiltrated throughout and the ilium is thickened by the projection of the tumour from its surfaces. On the outer aspect, a section throughout the growth has been made, which is turned forward. A "brush-like" appearance is presented by the closely-set fibres springing vertically from the surface of the bone, and of

* The condition of the tumours from long immersion in spirit, or other causes, not permitting of a microscopic examination.

which the tumour is, to a great extent, made up. The ventral aspect of the ilium is deeply eroded, and the bone is seen to be infiltrated and soft; towards the anterior part the same appearance is presented by the tumour growing out from its surface.

From an aged person, whose liver contained many medullary tumours.

515. A Femur, of which the shaft has been in great part destroyed by ulceration, or by the pressure of a tumour. Around the ulcerated part the bone is rough and porous. Masses of bone, composed of fine osseous fibres, originally connected with the femur, have separated in maceration. Soft matter was mixed with these, and formed a large tumour around the femur, the remaining part of which is preserved in the next preparation. I. 26

516. Section, including the outer surface, of the Tumour last referred to. It consists for the most part of dense fibrous tissue, in which are mingled some fine bony fibres. At its centre the substance was broken down and formed a large irregular cavity. I. 27

There is a cast of the limb from which the two preceding specimens were taken—No. 13.

* * * * * * *

TUMOURS IN GREAT PART CALCIFIED OR OSSSIFIED—OSTEOID TUMOURS (probably Sarcomata).

517. A Femur, from the whole circumference of which a Tumour of a very large size has arisen. It extends from the condyles to near the upper end of the bone. The small portions of the femur remaining above and below the tumour are healthy. The tumour consists of bone, of a light texture and grey colour, in thin lamellæ and very fine fibres, groups or masses of which, being arranged in nearly parallel lines, give the surface of the tumour a fibrous aspect. The tumour, probably, is an osteo-sarcoma, and was covered by some softer substance. A. 132

(In Case E.)

518. An Osteoid Tumour of the Tibia and Fibula, probably an ossifying sarcoma. I. 314

(In Case E.)

519. A longitudinal section of an Osteoid Tumour, involving the lower two-thirds of the left Femur. It was removed from a seaman, aged 45 years, in whom it had existed for five years. During the last six months previous to amputation it had rapidly increased.

When the integuments, which were healthy, were reflected from its surface, the muscles investing the tumour were found pale and softened, wasted and degenerated, and here and there in their substance small circumscribed portions of a firm growth appeared. It was difficult with the naked eye to define the limits of the growth; it seemed to pass gradually into the adjacent muscles. The surface of the tumour was of a pale buff colour, firm, and could be cut with a knife, but a few lines below this it passed into compact bone. The section displays the continuity of the tumour with the femur.

The case is fully described in Mr. Lawrence's *Lectures on Surgery*, 1862.

520. The other half of the same Tumour, which has been macerated.

521. Section of a Femur with the osseous part of a Tumour occupying the shaft of the bone. The tumour measured thirty-six inches in circum-

ference. Its larger and outer part consists of medullary substance; the smaller and deeper, of a mixture of medullary substance and bone. The head of the femur is the only portion of the bone retaining its healthy structure. The morbid osseous substance is fragile, light, spongy, and cancellous; but the form of the cancellous spaces differs materially from that observed in healthy bone. I. 170

From a girl aged 11 years.

522. Sections of the Femur last described. I. 171

Presented by Joseph Sargent, Esq.

523. Section of the head and upper part of the shaft of a Tibia, and of an Osteoid Growth around and within it. A dense osseous substance, as hard as ivory, and dull white, like chalk or pumice-stone, occupies the place of the cancellous texture, and extends some way down the medullary canal. The tumour around the bone consists in part of a similar osseous substance, and in part of a soft substance, spongy and cellular in some situations, and medullary in others. A portion of the periosteum is separated, to show that the morbid growth has originated beneath the membrane from the surface of the bone itself. The smaller tumour connected with one side of the morbid mass occupied the situation of the popliteal lymphatic glands, and consists throughout of bone, partly ivory-like and partly spongy. I. 139

Microscopic examination showed the tumour to be an Osteo-sarcoma.
Microscopic sections are preserved, No. 40; and a drawing, A. 3.

524. The other half of the Tibia and Tumour last described, from which the soft matter has been removed by maceration. I. 140

525. Section of the Stump of the Femur from the same patient as the two preceding specimens. The extremity of the bone is covered by skin. Within the medullary cavity are distinct morbid deposits, consisting partly of osseous, and partly of soft, matter. I. 141

The patient was a middle-aged woman in whom the disease made slow progress for sixteen years, and gave little or no pain till three months before the amputation of the limb. She died eight weeks after the amputation with similar osteoid growths in the inguinal glands and lungs, and with wart-like tumours scattered over the diaphragm.

526. Sections of a Tibia, exhibiting a deposit of dense and very hard osseous substance, both upon the outer surface and within the medullary tissue of the upper two-thirds of its shaft. The original walls may be recognized on the surface of each section, but they are continuous with the tumour. A circumscribed space at the upper part of the shaft is covered by irregular plates of bone set vertically upon it. It is probable that on this space there was a softer portion of an osteoid tumour (osteo-sarcoma), which has been removed by maceration. I. 24

527. A Section of the upper end of a Fibula, and of a Tumour which is connected with it. The tumour consists of a mixture of bone and a softer fibrous-looking substance, and appears to have arisen from the periosteum. I. 60

528. Sections of a Fibula, upon the external surface of which are several Osteoid Tumours—masses of compact white osseous substance, the outer surfaces of which have a fasciculated and finely fibrous aspect, like the surface of pumice-stone. Around these, the walls of the bone are in parts superficially ulcerated, and in parts thinly covered by new bone. The medullary canal is partially obliterated by a similar substance. I. 61

TUMOURS CONTAINING CYSTS.

529. Portion of a Femur, of which the lower extremity is expanded into a large

Cyst, which was filled by liquid and coagulated blood and a small quantity of brain-like substance. The cyst is nearly globular; its walls are from a line to two lines in thickness, composed of thin plates of bone and fibrous membrane, smooth externally, and presenting internally at some parts a rough surface of bone, and at others numerous prominent decussating fibrous bands and cords, like the texture of the basis of a spleen or of erectile tissue. To these bands, as well as to the osseous surface, loose flocculi and small portions of brain-like substance are adherent. Below, the cyst is bounded by the articular cartilages, the texture of which is unaltered; above, by the shaft of the femur which terminates abruptly just before it is expanded into the cyst. The shaft above the cyst presented numerous small spots of effused blood, like ecchymosis beneath the periosteum. I. 220

From a gentleman, 30 years of age, in whom the tumour had been two years in progress. Four years after the amputation of the limb he was in good health.

530. The Head of a Tibia with a large Osseous Tumour (probably an osteo-sarcoma) surrounding it. The tumour apparently originated from the external surface of the tibia and beneath the periosteum, which, in one situation, is seen continued from the tibia upon its external surface. In the centre of the tumour is a large irregular cavity which was filled by purulent fluid, and upon one part of its surface are some smaller cavities which were filled with blood, and the sides of which are formed by a dark coloured and soft substance. A part of the interior of the head of the tibia is occupied by a similar osseous substance. I. 117

531. A large Cyst connected with the upper part of the Tibia. The disease seems to have commenced in the head of the tibia. The greater part of the wall of the bone is absorbed, so that the parietes of the cyst are formed above by the cartilage which covered the head of the bone, and in nearly all other directions by condensed fibro-cellular tissue, or the distended periosteum. A large portion of the cyst has been removed, to give a clear view of its interior, which is uneven, in parts fasciculated and coarsely reticulated, in other parts shreddy. It probably contained blood and had its origin (like the similar specimen, No. 529) in a medullary tumour growing within the head of the bone. I. 32

532. Portions of a Humerus and a Tumour connected with it, which apparently originated in the bone. The greater part of the shaft of the humerus has disappeared. The tumour connecting the remaining portions of the bone consists of soft pale substance of gelatinous aspect, in the centre of which is a large cavity, which contained a thick serous fluid. The brachial artery and nerves are attached to the exterior of the tumour, but they are healthy. I. 86

The tumour had a constant and regular pulsation, which ceased on compression of the subclavian artery, but the cause of which was not discovered in the examination of the limb. The patient was an old woman.

533. The Lower End of a Femur, with the contiguous soft parts occupied by a soft tumour containing a large cyst. Immediately above the condyles the bone has been almost completely absorbed, its continuity being preserved only by a small portion of the other part of the shaft.

From a woman aged 36 years, in whom the disease had existed for ten months.

534. Section of a Tumour occupying the situation of the head and upper third of the shaft of the Tibia. The external surface of the tumour is covered in by the aponeurosis which invested the knee-joint, and by remains of the walls of the bone extended and thinned around it. At the upper part of the tumour

are the semilunar cartilages and the articular surface of the tibia in a sound state, but enlarged. Internally the tumour consists of a mixture of soft medullary substance and bone, disposed in the form of large cysts of various shapes and sizes, some of which were filled by a clear yellow fluid, others by coagulated blood. The walls of the cysts consist of membrane with bony fibres dispersed through it. Between the cysts are considerable spaces, filled by soft and shreddy medullary substance, which extends for a short distance into the interior of the shaft of the tibia, and then terminates with an abruptly circumscribed line. I. 95

From a woman 30 years old. The disease, beginning after a fall on the knee, had existed two years and a-half, and had gradually increased, without pain. She recovered after amputation of the limb.—*See* an account of the case by Mr. Lawrence, in the *Medico-Chirurgical Transactions*, vol. xvii, p. 35. London, 1832.

CYSTIC TUMOURS OF THE MAXILLÆ.

535. Sections of a Tumour with the side of the body of the Lower Jaw in which it originated; removed by operation. Part of the mucous membrane of the mouth, unaltered in structure, is extended over the upper surface of the tumour. The disease originated in the cancellous texture of the jaw. The walls of the bone are expanded into a thin case enclosing the tumour, but, in consequence of the absorption of the bone in some situations, this case is incomplete. The morbid growth consists of granules of a peculiar fatty-looking substance, partitioned by fibro-cellular tissue, and having cysts dispersed through it which contained a glairy fluid. The boundaries of some of the cysts are thin plates of bone. I. 147

Microscopic examination of the tumour showed that it consisted of fibrous tissue embedded in which were cylinders and alveoli of elongated, narrow, almost spindle-shaped epithelial cells. The tumour may be regarded as essentially of the same nature as the following.

See microscopic sections, No. 51.

From a man aged 25.

536. A Cystic Tumour involving the left half of the Lower Jaw and extending slightly beyond the symphysis. The outer and lower surfaces are covered by a thin expanded plate of bone. On the upper and anterior edge of the growth the left incisors, canine, and first bicuspid teeth are crowded together. Large cysts containing turbid brown serous fluid, which were ruptured during the operation, are seen on the upper and outer surface. Part of the inner surface is covered by the buccal mucous membrane, where an elongated ulcerated depression is seen, which was produced by the pressure of the upper teeth. The section shows an agglomeration of cysts of various sizes; most of them are filled by a red granular material, which was found on microscopical examination to be composed of blood-clot and colloid material; a few contain a cream-like glutinous fluid; others were filled by a turbid brown serous fluid. The cyst walls are formed of tough fibrous tissue, containing rarely a plate of bone, and are lined by a shining membrane. A portion of the right side of the symphysis is preserved, in which a cavity is seen—produced by expansion of the compact layers of the bone—filled with a soft, red, solid growth. I. 395

Microscopic Characters.—The solid portion of the tumour was composed of columns of cells and nuclei of the epithelial type, which, when cut transversely, presented the appearance of alveoli; similar small columns branched out from the sides of the larger. The cells in the centre of the columns had, in many places, undergone a colloid change, and by the complete metamorphosis of the cells the cysts were formed. From the buccal mucous membrane covering the tumour, in certain parts club-shaped and branching cylinders extended down from the deep stratum of the epithelium, as in the ordinary formation of epithelial cancer. The microscopical examination of the tumour indicates that it is an epithelial cancer extending from the gum into the jaw, and undergoing colloid metamorphosis.

It was removed from a lady, aged 45 years, and had been growing for ten years. The tumour did not cause any pain, and did not affect the general health. The submaxillary lymphatic glands were not enlarged. Ten years before the swelling of the jaw commenced,

she had, for a long period, a discharge from the socket of an extracted tooth, and was told by a surgeon that the jaw was necrosed. The tumour grew in this situation.

Microscopic sections are preserved, No. 52.

537. An Inferior Maxillary bone, the greater part of which is irregularly expanded to form imperfect septa between cysts. These, which originated independently of one another in the interior of the bone, were lined with a highly vascular membrane, and contained thin, serous, or grumous, blood-tinged fluid. Of some the walls were thin; of some, thick and resisting, as in the case of the posterior mass, which, in its increase, pressed upon, and caused absorption of, the left ascending ramus and coronoid process. I. 308

This preparation was obtained from the body of a man aged 75. The disease had been five years in progress. The age of the patient prohibited its removal, but the various cysts were from time to time punctured and their contents evacuated.—*See* an account of the case by Mr. Coote. *Lancet*, October 10th, 1857.

538. Portion of Superior Maxilla containing a mass of Colloid Cancer, which filled the antrum and the spheno-maxillary fossa.

It was removed from a patient aged 31, and had been growing three years.

DENTIGEROUS CYSTS.

539. Portion of a bony Cyst which was removed from the external and lateral part of a lower jaw. The cyst is lined by a thick and soft membrane which has been in part separated from it. The cavity of the cyst was filled by a glairy fluid, and at the bottom of it a canine tooth of the second set was adherent to the lining membrane. Upon the exterior of the cyst are some branches of the facial nerve which were removed with it. At the bottom of the bottle is the tooth which was contained in the cyst. I. 119

540. Part of a bony Cyst formed by expansion of the walls of the lower jaw of a sheep. The cyst was full of fluid, and an incisor tooth is loosely attached to its walls. I. 119A

HYDATIDS IN BONE.

541. Half a Pelvis, exhibiting the effects of the growth of hydatids within the bones. The walls of the ilium are separated, and are in many places absorbed, so that there are large apertures in them, which open into a cavity extending through its whole interior. The same cavity communicates with that of the pelvis by a large opening in the acetabulum; and, by other openings, with a cavity in the interior of the sacrum, and with the spinal canal. There are several apertures in the posterior part of the sacrum. All these cavities were filled with hydatids, which had also protruded through the apertures in the walls of the bones, and were contained in cysts formed by the thickened periosteum and other tissues. I. 215

542. Part of the Acephalocyst Hydatids which were contained in the Bones just described. Some of them are entire, but the majority have been ruptured. I. 216

The patient was an elderly woman. There were other hydatids in a large cyst connected with the ovary. The disease was of long standing, and the patient died with suppuration of some of the cysts.

ANGIOMA, INVOLVING BONE.

543. A Portion of the Skull-Cap of a child, which is very much thickened, and so soft in its texture as to be easily cut with a knife. It has throughout an appearance of great vascularity; and the soft parts covering it had the

aspect of a nævus. This condition existed from the birth of the child, and extended over the left side of the head and face and the left arm and shoulder. I. 54

Presented by William Kingdon, Esq.

BONES VARIOUSLY ALTERED BY THE GROWTH OF TUMOURS.

544. Part of the Skull of a man about 40 years old, who had a large malignant tumour of the face. The tumour appears to have originated at the nasal process of the left superior maxillary bone and at the left nasal bone, upon which there is a projecting growth of processes and plates of bone. The tumour, extending from this centre, produced absorption of the inner and lower part of the left orbit, the inner and anterior part of the right orbit, the septum of the nose, the turbinated bones, and the middle and posterior parts of the palate. To a slight degree also it destroyed the left cribriform plate of the ethmoid bone, and the adjacent part of the upper wall of the orbit. At nearly all the parts of the bones upon which the tumour encroached, there is a thin everted border of bone. I. 225

545. Portion of the Cranium of a young person. A growth of short, vertically-placed, osseous fibres and lamellæ has taken place on a large extent of both the external and internal surfaces of the cranium. They probably formed the basis of an ossifying tumour. The bone is completely perforated by many minute apertures. I. 137

546. Portion of the posterior and upper part of a Skull, with the subjacent Dura Mater. There is a large aperture formed by ulceration through the skull and the dura mater, both above and below the tentorium cerebelli. The edges of the ulcer, both in the bone and in the dura mater, are covered by granulations. 6. 57

From a woman 50 years old. The disease commenced with what was regarded as carcinoma of the scalp, which, having passed into the stage of ulceration, slowly spread through the skull and dura mater to the brain.

547. Frontal Bone, with the subjacent Dura Mater. Several soft medullary tumours have been formed on the external surface of the dura mater. Many of them are embedded in the skull; and one, of large size, having produced the complete absorption of the bone, has passed to the outside of the skull, where it is connected with a similar large mass between the bone and the pericranium. The bone itself is of very dense texture. 6. 58

548. A Skull-Cap, in which there are numerous oval, rough-edged apertures. Some extend through both tables; some are in the outer, others in the inner table alone. There has also been extensive destruction by ulceration of the frontal bone. The portions of bone between the apertures are healthy. A. 64

It is most probable that these changes were consequent on the growth of tumours. (In Case G.)

549. A Skull-Cap, in which are many large ulcerated holes, occasioned by tumours originating in the dura mater. As in the preceding specimen the edges of the holes are abrupt, rough, and sharp, and the loss of substance in the diploe is a little greater than in either of the tables. Ulceration has also in one situation commenced on the exterior of the frontal bone. The grooves for the meningeal arteries, which were doubtless enlarged for the supply of blood to the tumours, are very deep, though the skull is not thickened nor otherwise diseased, except in the parts involved by the tumours. A. 74

(In Case G.)

550. Portion of a Skull-Cap, in which there has been extensive absorption. In the situation of the absorption of the inner table there were scrofulous tumours upon the dura mater. There were also sores in the scalp at the part where the outer table has been absorbed. A. 85

(In Case G.)

551. A Skull with the Lower Jaw. Many distinct portions of the cranium have been removed by ulceration like that consequent on the growth of tumours. In some situations, the absorption is confined to the diploe and outer table of the skull; in others, it extends through both tables. There has been disease in one of the articulations of the jaw, producing absorption of the articular cartilage, with a deposit of bone around the circumference of the glenoid cavity. The corresponding condyle is in part removed by absorption; its surface is rough, except at one point, where it is highly polished, and has an ivory-like texture. In the ramus of the jaw on the same side, disease, apparently commencing in the cancellous tissue, has produced absorption of the bone at many separate and minute points. A. 87

(In Case G.)

552. A Skull-Cap, exhibiting ulceration of its outer and inner tables in numerous minute holes, of which many are distinct in close-set groups, but more have coalesced. There were fungous excrescences filling these minute excavations in the bones, some of which were attached to the pericranium, and others to the dura mater; but it is uncertain whether they originated in the diploe or in the membranes investing the skull. A. 83

(In Case G.)

553. A Skull-Cap, with numerous minute round holes in both the outer and inner tables. Generally, the absorption of the outer corresponds with that of the inner table.

An apparently similar specimen to the preceding, No. 552. A. 62

(In Case G.)

554. The Frontal, Parietal, and part of the Occipital Bones. The anterior surface of the frontal bone is to a considerable extent destroyed, leaving a large circular opening with irregular everted edges, portions of the outer table projecting in ridges around them. On the left side smaller perforations are visible, and the ridges become more conspicuous. Below, on this side, the walls of the frontal sinus are wanting, and the orbital plate, pushed downwards and forwards, is bounded anteriorly by a sharp and prominent ridge. On the right side the anterior wall of the frontal sinus has been destroyed, but the orbital plate is only slightly interfered with, and contrasts with the condition of the left. A. 160

From a man aged 26 years, who suffered for eight years from a tumour, slowly increasing, which was situated over the frontal bone, free from pulsation, and tolerant of pressure. It was partially removed by an operation. The patient sank rapidly under an attack of erysipelas, accompanied by acute œdema of the larynx, for which tracheotomy was performed shortly before death. The openings, described above, were closed by the dura mater, except at the inferior border of the larger one, where the morbid growth (medullary cancer) perforated that membrane, and, forming a tumour the size and shape of a chestnut external to the visceral layer of the arachnoid, pressed upon the left anterior lobe of the brain.

(In Case G.)

555. The Metacarpal Bone of a Little Finger. The bone is enlarged, apparently by an expansion of its walls; an osseous tumour growing from this bone had been removed some time previous to the amputation of the finger. I. 209

556. The upper part of a Femur, in which an oblique fracture, about an inch below the lesser trochanter, has united with angular deformity, the superior

portion lying behind and across the inferior one. In the upper portion, in the place of the natural structure of the walls of the femur, there is only a fine network of bony plates and fibres, and the osseous tissue of the cancellous portion is formed of fine spongy and porous bone. The same change has taken place, in a less degree, in the lower portion. The diseased portions of bone, as well as the bond of union of the fracture, were filled, as if infiltrated, with tough, grey, cancerous matter. APPENDIX 5

The patient was a woman 47 years old. Two years before death her breast was removed on account of hard cancer. Sixteen months afterwards, when the disease in the breast had returned and ulcerated, in stepping from a cabriolet, she fractured her femur. The fracture was united in six weeks, but she did not regain the use of the limb. She died eight months after the fracture, with extension of the cancerous disease of the breast.

Presented by H. G. Grayling, Esq.

557. Portion of a Tibia, exhibiting superficial and extensive ulceration of its upper half, with new bone about the borders of the ulceration.

A fleshy tumour, originating in the soft parts, completely surrounded this part of the bone. A. 53

(In Case G.)

558. A Tibia, in which there is a circumscribed oval ulcer which has destroyed the anterior half of its walls, laying open the medullary cavity. There is scarcely any appearance of reparation; the edges of the ulcer are sharp and uneven, and the adjacent bone is light, but not otherwise unhealthy. I. 59

559. A Fibula and Tibia. The former rough and irregular from deposits of new bone upon its surface. The latter light and porous, compact tissue being absent except at the articular surfaces. It was infiltrated throughout with medullary cancer, which had caused in parts complete absorption of large masses of bone, and, just below the head, had destroyed the whole thickness of the shaft. A. 161

(In Case G.)

560. A Tibia and Fibula. Ulceration, extending probably from a malignant disease of the integuments, has penetrated the front wall of the tibia, destroyed its medullary tissue, and made small apertures in its posterior wall. A deposit of bone has taken place upon the fibula, and there is ossification of the interosseous ligament. A. 51

(In Case G.)

561. Portions of a Tibia and Fibula. Ulceration of the walls of the tibia has penetrated to its medullary cavity. The fibula is enlarged by heavy new bone, and the interosseous ligament is extensively ossified. A. 55

(In Case G.)

562. A Tibia and Fibula. A large portion of the shaft of the tibia, in its entire thickness, has been removed by malignant ulceration, like that in the last-described specimen. The inferior portion of the tibia is united to the fibula by bone. The fibula is greatly thickened, and a fracture in the middle of its shaft has firmly united. A. 78

(In Case G.)

563. Portions of a Tibia and Fibula. A large portion of the shaft of each bone has been destroyed by ulceration, in consequence, probably, of some malignant disease; as in No. 549, the margins of the ulcer are abrupt, sharp, and excavated. A. 77

(In Case G.)

SERIES II.

DISEASES OF JOINTS.

DISEASE PROBABLY BEGINNING IN THE SYNOVIAL MEMBRANE.

564. A Hip-Joint, from a young woman, in which the articular cartilages of the femur and acetabulum have been removed by ulceration, and the exposed surfaces of the bones are covered by soft granulations, and flakes of lymph. The capsular ligament is thickened, and the head of the femur and the acetabulum appear enlarged. At the anterior and inner part of the capsule, there is a large oval opening with smooth defined margins. This opening was immediately beneath the tendon of the psoas and iliacus muscles, in the situation at which the bursa naturally existing beneath that tendon sometimes communicates with the cavity of the hip-joint. II. 58

A large psoas abscess had long existed in this patient: and it seemed probable, that the pus having passed under the tendon of the psoas and iliacus muscles, and through the aperture of communication between the bursa and the joint, had excited acute inflammation of the latter.

565. A Hip-Joint, exhibiting the effects of inflammation. The cartilage has been completely separated both from the head of the femur and from the acetabulum, and some shreds and ulcerated remnants of it are loose in the cavity of the joint. The ligamentum teres is destroyed. The exposed bones are superficially but smoothly ulcerated. The cavity of the acetabulum is enlarged by the ulceration of its walls. The capsule is thickened, and its synovial surface appears swollen, soft, and thinly covered by lymph. II. 14

The patient was a sailor, 40 years old. He awoke one night with intense pain in the hip, which lasted some hours, and then in a less degree continued, till, in a fall, he bruised his hip. After this the pain again became exceedingly severe; and continued, without remission, till he died.

566. A Knee-Joint, showing the earlier stage of disease, commencing in the synovial membrane. The joint was filled with pus and broken down lymph. The synovial membrane is thickened, pulpy, and vascular. The pouch formed by the reflection of the synovial membrane in front of the thigh is enlarged, and the membrane is here lined by flakes and bands of inflammatory material. A vascular fringe of pulpy synovial membrane surrounds and encroaches upon the articular cartilages. The surface of the cartilages is irregular from absorption, as if chiselled, but at no part is the bone exposed. The cartilage covering the left condyle of the femur is removed to show the vessels springing up into it, from the bone beneath. A section has been made through the patella. The bone is vascular; at one point the inner surface of the cartilage is eroded by granulations springing up into it from the bone (sub-chondral caries). The ligaments were almost destroyed.

Microscopic examination of the cartilage showed that its cells were proliferating.

From a boy aged 13. He stated that his knee had been bad for six months. It was extremely swollen, hot, and painful. The tibia was displaced backwards and outwards.—See *Colston Ward Book*, vol. v, p. 429.

567. A Knee-Joint, exhibiting the effects of inflammation. An abundant deposit of lymph has taken place upon the internal surface of the synovial membrane, and thin flakes of it adhere to the articular cartilages. II. 3

Vide No. 612.

"PULPY DEGENERATION" OF THE SYNOVIAL MEMBRANE. ("White Swelling.")

568. An Elbow-Joint, in which, probably by chronic inflammation, the synovial membrane is converted into a light-brown substance, of a firm texture, about half or three-quarters of an inch in thickness, with white lines running through it in various directions, and with a soft smooth surface. The morbid change terminates at the margins of the articular cartilages. Around the neck of the radius, the thickened synovial membrane forms a fold projecting into the cavity of the joint. The cartilages and bones of the joint appear healthy. II. 12

The patient was a man 60 years old, and the disease had existed fifteen months. It originated in a blow, after which the joint remained very stiff, but without pain and with little swelling, for twelve months. Numerous small swellings, like enlarged lymphatic glands, then formed around the joint; they inflamed, and when punctured discharged a glairy fluid. The disease outside the joint increasing, the limb was amputated. On examination the swellings were found to have no connection with the interior of the joint. The difficulty of motion in the joint, especially the hindrance to the rotation of the radius, appeared to depend on the projecting folds of the synovial membrane.

569. A Knee-Joint, exhibiting a peculiar change of structure in the synovial membrane. The capsule has been extensively opened and raised for the purpose of exposing the cavity of the joint. The internal surface of the synovial membrane is granulated. The membrane has everywhere become very thick, and especially so at the upper and front part of the joint, where its thickness is not less than two inches, and its substance is so firm as to be almost of a gristly texture. The part of the membrane opposed to the articular cartilage of the femur was adherent to it. The whole of the soft parts external to the diseased synovial membrane have been carefully removed, so that nothing else is left around the joint. II. 24

Vide No. 633.

DISEASE PROBABLY BEGINNING IN THE ARTICULAR ENDS OF THE BONES.

570. The Hip-Joint of a child, in which the ligamentum teres, the cartilage of the acetabulum, and a part of the substance uniting the three component bones of the os innominatum, have been destroyed by ulceration. A portion of glass is passed through the floor of the acetabulum into the pelvis, where a collection of pus was formed beneath the obturator muscle and fascia. The acetabulum and the capsular ligament, a part of which is preserved, are lined by lymph, which was mingled with pus; but, with the exception of a slight superficial ulceration of its articular cartilage, the head of the femur is healthy. II. 59

The child, 7 years old, had suffered for six months with pain, and obscure signs of disease, in or about the hip-joint, when she was seized suddenly with the most acute pain in the joint, which after some time remitted but returned at intervals. Two months afterwards she died.

Presented by R. W. Tamplin, Esq.

571. A Hip-Joint, of which the synovial membrane and the ligaments are swollen and intensely congested. The surfaces of the joint are smeared with shreds of recent lymph. The cartilage investing the femur is thinned by superficial ulceration; that investing the upper margin of the acetabulum is undermined, and detached from the bone. On the dorsum ilii just above the margin of the acetabulum, is an abscess cavity, which contained about a teaspoonful of cheesy

pus. This cavity communicates by a narrow track, through which a bristle is passed, with the acetabular cavity where the cartilage is detached. A similar track also passes through the ilium at the level of the upper margin of the acetabulum, into an abscess cavity within the pelvis.

From a child aged 7 years, who died in the hospital from purpura hæmorrhagica. The disease of the hip had been in progress in a chronic form for two years, but had become much more acute just before her admission a fortnight previous to her death.

A section through the head and neck of the femur shows that the cancellous tissue is healthy.

There is a drawing of the specimen, No. 36.

572. Bones of a Knee-Joint, exhibiting the effects of inflammation. Parts of the free surface of the cartilage upon each bone have been absorbed. There has also been a more extensive absorption of the deep or attached surface of the cartilage, so that its connection with the bone was loosened, and it was readily separable from it. Where the absorption of the deep surface of the cartilage had taken place, the surface of the bone was covered by granulations. II. 31

In the recent state the bones were seen to be exceedingly vascular; and it was presumed that inflammation of their articular surfaces preceded the other changes in the joint.

573. Bones of the Knee and Ankle-Joints of a boy, in which ulceration, connected with acute necrosis of the tibia, extended through both the upper and lower articular surfaces of the bone. The articular cartilages of the femur and patella are in places destroyed, and their attachment to the bone is loosened. The cartilage of the upper surface of the astragalus is almost wholly removed, and the exposed bone is covered with lymph. II. 46

From the same patient as No. 33 in the preceding Series.

574. Sections of the Bones of a Knee-Joint. Within the outer section of the head of the tibia, and occupying the position of the intermediary cartilage and epiphysis, a cavity containing pieces of necrosed bone imbedded in gelatinous granulation tissue is seen. The articular cartilage of the tibia is destroyed, and that of the femur is deeply absorbed. The trochlear surface of the femur is tuberculated from absorption of the cartilage around masses of bone imbedded in it. The synovial membrane was pulpy, and the joint filled with pus. The disease of the joint was evidently due to inflammation, extending from the articular end of the tibia.

Removed by amputation from a boy aged 2½. The knee is reported to have been quite sound until a fortnight before his admission to the hospital: it then presented the appearances of long standing disease. There was no history of injury. The disease in the bone was not suspected before removal of the limb.—*See* an account of the case in the *St. Bartholomew's Hospital Reports*, vol. xv, p. 131.

575. The lower extremity of a Femur, a slice having been sawn off its external condyle. On the portion thus separated, close to the point of attachment of the anterior crucial ligament, there is a deep cavity lined by a smooth membrane. By its side is suspended a small, oval-shaped portion of bone, which, with its surface bare and rough, was loosely contained in the cavity. The synovial membrane was thick and pulpy, and pus occupied the interior of the joint. II. 68

From a boy who had received several severe blows upon the knee, the inflammation which ensued being at first neglected. Suppuration was eventually established in the joint, and an abscess formed between the periosteum and the shaft of the femur. His health failing, it became necessary to amputate the limb. He recovered from the operation without an unfavourable symptom.

576. A Knee-Joint. A section of the head of the tibia shows a small portion of dead bone in the centre of its cancellous texture. A piece of glass is passed through a fistulous passage extending from the skin covering the front part of

the head of the tibia to the dead bone in its centre. The synovial membrane of the knee-joint is very vascular and its internal surface is covered by a layer of lymph, into which the injection has freely passed from the vessels of the synovial membrane. I. 123

From a young woman, on whom amputation of the limb was performed on account of inflammation in the knee-joint consequent on necrosis in the head of the tibia. The necrosis had existed many years.

577. The inner section of an Ankle-Joint. The articular surfaces of the tibia and astragalus are extensively destroyed and covered by granulations. There is a cavity in the lower end of the tibia, which is filled up by soft fibrous tissue. The bone above it is condensed, and the astragalus, immediately beneath the eroded surface is similarly hardened. Numerous fistulous tracks, through which glass rods have been passed, lead from the joint through the integuments. The synovial membrane is pulpy. The other bones of the tarsus are soft but not carious, and the joints are healthy.

From a woman, aged 58, whose ankle became swollen and painful without evident cause two years before her admission to the hospital. Amputation through the leg was performed.—See *Stanley Ward Book*, vol. vii.

578. The other section of the Tibia preserved in the preceding specimen after maceration. There is a large cavity in the articular end and internal malleolus, the walls of which present two large perforations; the cavity was filled in the recent state by gelatinous tissue. A narrow canal extending from the upper part of the cavity along the centre of the shaft is cut across; its continuation passes obliquely through the bone and opens on the inner surface. Some distance above this a small cavity is seen which does not communicate with it. The lower end of the bone is rough and thickened by the formation of new bone on the surface.

579. The lower end of a Tibia, removed from a girl aged 17. A cavity in the cancellous tissue just above the articular extremity is filled by a deposit of caseous material. The ankle-joint was destroyed. Disease had existed in the leg and foot for fourteen years. I. 319

Vide also Nos. 67 and 68.

SPECIMENS ILLUSTRATING THE CHANGES IN THE STRUCTURES OF JOINTS OR IN THE ARTICULAR ENDS OF BONES, THE EFFECTS OR CAUSE OF JOINT DISEASE.

DESTRUCTION OF LIGAMENTS.

580. The Hip-Joints from the same person. In each the ligamentum teres is wanting, but a portion of its acetabular attachment is seen in one specimen. The capsules appear perfectly normal. The depressions for the attachment of the round ligaments are deeper than usual, and the cartilage forming the upper margin is soft and filamentous; immediately above this point the cartilage of each femur is ulcerated, superficially in one and more deeply in the other. On the under surface of the head of each femur, and near the margin of the articular surface, there is a similar symmetrical erosion of the cartilage. A section through the head of one femur shows that the bone is healthy, except immediately beneath this ulceration, where it is much softened. The cartilage of the acetabulum preserved is so thin in places as to show the bone through it, and, at the upper margin, a plaque of cartilage of considerable size is detached. II. 43

581. The Bones of two Hip-Joints from the same person. In each joint are exhibited exactly the same morbid changes. Nothing remains of either ligamentum teres, except a few shreds of fibrous tissue attached to the head of

each femur. Close by the insertion of this ligament a similar small portion of each of the articular cartilages has been removed by ulceration, and on the anterior surface of the neck of each femur there is an irregular aperture in its synovial and fibrous covering, beneath which the surface of the bone is hard and nodulated. II. 52

SEPARATION AND LOOSENING OF THE CARTILAGE FROM THE BONE.

582. A Knee-Joint, exhibiting the effects of acute inflammation affecting chiefly the articular cartilages. The synovial membrane is slightly thickened and increased in vascularity. Upon the patella, as well as upon the outer condyle of the femur and the head of the tibia, the free surface of the articular cartilage is extensively absorbed. There has also been some absorption of its deep or attached surface, so that its connection with the bone is loosened. The exposed surface of the bones is very vascular. II. 45

The patient was a boy aged 15 years. The disease had been of only two months' duration; it commenced, apparently, in the cellular tissue of the ham, and thence extended into the joint. During the last fortnight of its progress the pain was extremely severe. The limb was amputated, and the patient recovered.

583. Section of a Femur, exhibiting the effects of inflammation of the cancellous texture and articular surface of one of its condyles. The increased vascularity of the bone is shown by the degree in which its vessels have received injection. The connection of the articular cartilage with the bone was loosened so that it was readily separated. II. 37

584. The articular portions of a Femur and a Patella, exhibiting partial absorption of the articular cartilages, and loosening of their connection with the bones. The cartilage upon the patella has been absorbed in its centre, and was readily separated from the bone, except at its border, where it maintained its natural firmness of connection. Upon the posterior part of the condyles of the femur, the whole thickness of the cartilage is absorbed; the exposed surface of the bone is rough and very vascular. II. 32

585. Sections of the condyles of a Femur. The articular cartilage is thinned, and its connection with the bone is so loosened that its separation was readily effected. Portions of the cartilage have been detached and turned downwards, to show that parts of the surface which were connected with the bone are unnaturally rough. The exposed surface of bone is very superficially ulcerated and thinly covered by granulations. II. 6

586. Portions of Cartilage which necrosed, and were separated from the condyles of a Femur, after amputation through the knee-joint had been performed.

The patient, a boy 14 years old, fractured his fibula, and there followed severe diffused inflammation of the leg, rendering its removal necessary. The skin flaps retracted so as in a few days to expose the condyles, when the piece of cartilage, along with smaller fragments, loosened and were removed.

ULCERATION OF ARTICULAR CARTILAGE.

587. A Patella, from which nearly all the articular cartilage has been removed by ulceration. The ulceration appears to have extended from the free surface towards the bone; the margins of the remaining peripheral part of the cartilage are either abrupt and smooth, as if cut with a curved chisel, or, in parts, thinly prolonged over the surface of the bone. All the cartilage that remains has retained its natural firm connection with the bone. The part of the surface of the patella which is exposed by the ulceration of the cartilage is itself superficially ulcerated and covered with lymph. II. 9

588. Section of an Ankle-Joint, exhibiting the effects of inflammation. The articular cartilages are completely destroyed, and the bones are superficially ulcerated and vascular. The other bones and the joints of the tarsus are healthy. II. 1

589. An Astragalus, from the superior articular surface of which nearly all the articular cartilage has been removed; a small portion remains closely adherent to the bone, and very thin. The exposed surface of bone is healthy, except at one small portion, which is superficially ulcerated. II. 2

590. An Ankle-Joint, from which nearly all the articular cartilages have been removed: the small portions which remain are thinned, and their connection with the bone is loosened. The bones are superficially ulcerated and very vascular. The posterior surface, by which the astragalus articulated with the os calcis, is similarly diseased. II. 4

591. A similar specimen of ulceration of the cartilages and bones of an Ankle-Joint; but here the exposed bones are covered thickly with lymph. II. 5

592. The extremities of a Tibia and Fibula, and the Astragalus. The corresponding articular surfaces of the ankle-joint show nodular overgrowths of the cartilage, associated with absorption and ulceration.

From a child, whose foot was removed for destructive disease of the ankle-joint.

593. An Os Naviculare from an old horse, exhibiting absorption of its articular cartilage and ulceration of the subjacent bone. I. 252

Vide Nos. 582, 584, 594, 595, 625, 626.
From Rheumatic Disease, *vide* No. 666 *et seq.*

FIBROUS DEGENERATION OF CARTILAGE.

594. A Patella, in which there is softening, with fibrous degeneration and absorption, of the articular cartilage. The disease affects only half the cartilage. At the borders of the diseased part there are cracks extending in various directions through the whole thickness of the cartilage, and some of its substance between the cracks is converted into close-set tufts of fine filaments, which float out from the surface of the bone, and are about twice as long as the healthy cartilage is thick. In the centre of the diseased spot, where the morbid change has made most progress, the cartilage has been wholly removed, and the exposed surface of the patella is hard and nodulated. II. 51

595. The Bones and Ligaments of a Knee-Joint. The anterior crucial ligament is wanting, and small portions of the articular cartilages of the femur and tibia have been absorbed, apparently after fibrous degeneration. The opposite joint was similarly and symmetrically diseased. II. 53

ULCERATION (Caries) OF THE ARTICULAR SURFACES OF BONES.

596. Bones of the Elbow-Joint, exhibiting the effects of inflammation which, probably, commenced in the joint. The texture of the bones is porous and spongy: their articular surfaces are ulcerated, and, upon the external surface of each bone, there is an irregular deposit of new bone in ridges and sharp processes. II. 30

597. Bones of the Wrist, exhibiting the effects of inflammation in the whole of the carpal and metacarpal joints. The articular surfaces of the several bones are extensively ulcerated,—some superficially, others deeply,—and there is a very abundant formation of new bone around the ulcerated parts. II. 23

598. Portions of an Os Innominatum and a Sacrum, exhibiting the effects of inflammation in the sacro-iliac symphysis and the posterior part of the ilium.

The surface of the diseased bone is ulcerated, and around it are irregular deposits of new bone. A large circular hole is seen in the ilium, the result of necrosis of a portion of its texture. B. 54

(In Case G.)

599. A Hip-Joint, in which the articular cartilage covering the acetabulum and head of the bone is completely destroyed. The exposed surfaces of bone are ulcerated, and the acetabulum is thereby enlarged. The ligamentum teres is also in great part destroyed, but shreds of it remain, and retain their connection with the bones. The capsule is thickened, and its inner surface is thinly lined by lymph. II. 19

600. A Hip-Joint from a child. Both the acetabulum and the whole of the head and neck of the femur have been destroyed by ulceration. The femur is still attached to the os innominatum by the obturator externus muscle. II. 18

601. Bones of the Hip-Joint, from a boy 18 years old, in whom disease of the hip had existed for twelve years before death. Part of the head and neck of the femur has been removed by ulceration. There has been also ulceration of the wall of the acetabulum, widening its cavity, and at one point penetrating into the pelvis. New bone has been formed in the bottom of the acetabulum, and was intimately united with the rough ulcerated surface of the femur. II. 48

The disease of the hip was not in progress when the patient died with phthisis.

602. Portion of a Femur, of which nearly the whole head has been destroyed by ulceration. The uneven rough surface of what remains is covered by shreds of false membrane, by which, probably, it was fixed in the acetabulum. II. 15

603. The bones of a Hip-Joint, in which there has been superficial ulceration of the head of the femur, and ulceration of the acetabulum penetrating to the cavity of the pelvis. B. 38

(In Case G.)

604. The bones of a Hip-Joint, in which there has been extensive ulceration of the acetabulum, and of the head, neck, and parts of the trochanters of the femur. There is necrosis of the tuberosity of the ischium and of a portion of the great trochanter: both the dead pieces of bone are surrounded by grooves of separation. An ulcerated passage extends from the acetabulum through the ischium, just above its spine; new bone has been formed upon the shaft of the femur and other parts adjacent to the seats of the necrosis and ulceration. B. 10

(In Case G.)

605. An Os Innominatum, in which ulceration has removed the whole surface of the acetabulum, and has formed a large aperture of communication between its cavity and the interior of the pelvis. B. 18

(In Case G.)

606. An Os Innominatum and Femur, from a boy, exhibiting the effects of disease of the hip-joint. The walls of the acetabulum are in great part destroyed by ulceration, and its cavity communicates by three apertures with that of the pelvis. The head of the femur is also completely destroyed. All the bones are atrophied, and the ilium is placed almost vertically, and deeply incurved. B. 46

(In Case G.)

607. The bones of a Hip-Joint, in which there has been ulceration of the acetabulum and of the head and neck of the femur. Osseous deposit has taken place around the neck of the femur, and in thick nodules upon the posterior

and inferior margins of the acetabulum. The remains of the head of the femur were adapted to the surface of new bone formed on the acetabulum; and the summit of a very large mass of new bone growing up from the upper part of the neck rested on the surface of the new bone formed behind the posterior margin of the acetabulum. B. 9

(In Case G.)

608. The bones of the Hip-Joint of a young person. The brim of the acetabulum, and the head, neck, and part of the shaft of the femur, have been completely removed by ulceration. There are also large ulcerated apertures in the upper and anterior walls of the acetabulum. B. 14

(In Case G.)

609. The bones of a Hip-Joint, in which there has been superficial ulceration of the acetabulum and of the head of the femur. The head of the femur was slightly displaced upwards. B. 15

(In Case G.)

610. Bones of a Hip-Joint. The neck of the femur is not more than half an inch long. The head is expanded and flattened into the form of a disk; its margin is very irregular; its articular surface is soft, and perforated by numerous small holes. The acetabulum is wide and shallow, in correspondence with the form of the head of the femur, which exactly fitted it. The notch of the acetabulum is very large, and much of the osseous tissue adjacent to it seems to have been destroyed. B. 51

(In Case G.)

611. Portion of a Femur, of which the head and neck have been removed by ulceration. New bone is formed, in a saccular shape, in front of the trochanter minor. B. 19

(In Case G.)

612. Bones of a Knee-Joint, exhibiting the effects of inflammation, which it was presumed commenced in the synovial membrane. The greater part of the articular surfaces of the tibia and femur are deeply ulcerated; the portions of them which remain are hardened and polished like ivory. Upon the exterior of each bone, contiguous to its articular surface, there is an irregular deposit of osseous substance. II. 36

613. Sections of the head and upper part of a Tibia. Portions of the bone, from long-continued inflammation, are irregularly excavated by ulceration, and the whole of its texture is porous and spongy. II. 163

The limb was amputated in consequence of destructive inflammation of the knee-joint.

614. The Lower Extremity of a Femur from a case of destructive disease of the knee-joint. The articular surface of the femur is penetrated by several distinct rounded patches of caries.

(In Case G.)

615. The Head of a Tibia, in which there are numerous Carious Cavities. II. 184

616. The bones of a Knee-Joint, exhibiting ulceration of the articular surfaces of the femur and tibia. B. 23

(In Case G.)

617. The bones of a Knee-Joint, in which the patella is united by bone to the space between the condyles of the femur, and the condyles are similarly united to the articular surfaces of the tibia. The disease probably commenced in the

head of the tibia, this part of the bone being altered in structure, and deeply ulcerated. The tibia is drawn under the femur, and the joint fixed in the half-bent position. B. 22

(In Case G.)

618. The bones of a Knee-Joint. The articular ends are deeply ulcerated, and a large perforation is seen between the condyles of the femur. The bones are light and spongy: slight bony anchylosis had taken place between them. B. 26

(In Case G.)

619. A Femur, exhibiting superficial ulceration of the articular surfaces, and there was a very deep ulceration of the head of the tibia. The internal condyle of the femur appears to be elongated, and the bone is light and brittle. B. 28

(In Case G.)

620. The lower end of a Femur, exhibiting ulceration of its wall, just above the condyles, with thickening of the surrounding bone, and superficial ulceration of the articular surface. B. 27

(In Case G.)

Vide also Nos. 625, 626. From Rheumatic Disease, *vide* No. 664 *et seq.*

For Specimens of Caries of the Intervertebral Articulations, see Series V, Nos. 1063, 1071, *and* 1072, *&c.*

SEPARATION OF EPIPHYSES.

621. Portion of a Femur from a young subject. Disease commencing in the hip-joint, has in its progress occasioned a separation of the head of the femur at the epiphysial line. There is also ulceration of a part of the surface of the head and neck of the bone. II. 35

622. The Head of a Femur, which became separated from the neck of the bone at the epiphysial line in the course of an attack of acute pyæmia. It was found lying loose in the cavity of an abscess which had formed at the hip-joint, and it was removed at the time the abscess was opened. II. 81

The patient, a boy 17 years old, recovered.

Presented by Mr. Rhind.

623. Portion of a child's Femur, of which the greater part of the head has been destroyed by ulceration. A portion of the head remains, but it is completely detached and is ulcerated on each of its surfaces. II. 16

624. The Upper Extremity of a Femur, with the ossific nucleus of the epiphysis of the head of the bone, which had been separated, and which was found after death in a large abscess, the result of an injury. II. 89

From a female child, aged 10 months.

For other Specimens of Separation of Epiphyses, see 63, 63A, 67, 68, 69, 71, 124, 125, 137, *and* 189.

DISPLACEMENT OR DISLOCATION OF THE BONES FROM DISEASE OF JOINTS.

625. A Hip-Joint, from an adult, exhibiting the effects of inflammation. The cartilage covering the head of the femur is completely destroyed by ulceration, and the exposed surface of bone is covered by lymph. The ligamentum teres, also, is destroyed. The head of the femur is dislocated from the acetabulum, and is drawn upwards and backwards upon the dorsum of the ilium, where it rests surrounded by a capsule formed, probably, in part by the diseased old capsule, and in part by the surrounding tissues thickened and consolidated. II. 17

626. The Hip-Joint of a young subject. Displacement of the femur has followed absorption of the margin of the acetabulum, and its head lies upon the ischium,

close to the notch and a little above the tuberosity, in contact with the great sciatic nerve, under which bristles are passed. Immediately below the head of the bone is the obturator externus muscle. The articular cartilage of the femur has been completely absorbed, and the surface of the bone is ulcerated and covered by lymph and granulations. No remains of the capsule are apparent. The shaft of the femur is fractured at the junction of the epiphysis of the great trochanter with the shaft. The periosteum is inflamed and separated from the bone some inches below the fracture, which occurred during life. The disease of the hip-joint was of long standing. II. 44

627. A Hip-Joint, in which acute disease had been several months in progress; from a boy 10 years old. The head of the femur is displaced towards the dorsum of the ilium. Ulceration of the capsule had taken place, and the head of the bone was contained in a cavity formed by the remains of the capsule, and by the surrounding muscles. Within this cavity, as well as in the acetabulum, was a mixture of a large quantity of pus and caseous matter. The section of the head of the femur shows caseous matter deposited in its cancellous texture. There is also a collection of caseous matter in the walls of the acetabulum communicating with its cavity and with the cavity of the pelvis. An abscess had formed between the periosteum and the shaft of the bone just below the trochanter. The sciatic nerve is seen upon the tuberosity of the ischium, near the dislocated head of the bone. II. 49

628. The head of the right Femur and the Acetabulum of a girl, aged 19. The femur was dislocated from disease of four years' duration, and there is a depression for the head of the bone above the acetabulum. The hip-joint was quite destroyed, and a large abscess in the front of the thigh communicated with the pelvis through an ulcerated aperture in the acetabulum.

(In Case G.)

629. A Knee-Joint, in which anchylosis has been effected by the organization of lymph upon and between the opposite surfaces of the synovial membrane. A portion of the adherent synovial membrane is reflected from the front of the joint. The patella is firmly united to the external condyle of the femur; and the tibia and fibula have been drawn backwards under the femur, lengthening and giving a very oblique direction to the external lateral ligament. The bones are atrophied. II. 7

630. A Knee-Joint, in which, in the course of inflammation of long standing, the Tibia and Fibula have been dislocated backwards, so that the head of the tibia is fixed to the posterior surface of the condyles of the femur. The patella is fixed by osseous anchylosis to the outer condyle. Both the lateral ligaments and the ligamentum patellæ are much elongated, but their tissue appears healthy. II. 57

631. A Knee-Joint in which, during the course of long-continued inflammation, the Tibia has been dislocated backwards and outwards. Firm anchylosis by fibrous tissue has taken place between the inner half of the upper surface of the tibia and the condyles of the femur. The patella is anchylosed to the outer surface and lower margin of the outer condyle of the femur. The external and internal lateral ligaments, retaining their normal attachments, are much elongated. II. 55

632. A Knee-Joint, from a young subject, amputated on account of disease of the synovial membrane. The articular cartilages and bones are unaltered. The lateral ligaments are apparently unaltered in structure, but are considerably elongated, and have permitted displacement of the articular surfaces. II. 40

633. Portion of the Synovial Membrane, with the Patella, from the Knee-Joint last described. The synovial membrane is considerably thickened, its internal surface is granulated, and portions of it, in irregular pulpy masses overlie, so that they nearly conceal, the cartilaginous surface of the patella. II. 41

Vide Nos. 617, 639, 649, 652, 653, and 655.

REPAIR AFTER CARIES OF THE ARTICULAR ENDS OF BONES.

634. The bones of a Shoulder-Joint, in which the glenoid cavity and head of the humerus have been entirely removed by ulceration. The ulcerated surfaces have smoothly healed; but, probably, there was no motion at the joint. B. 31

(In Case G.)

635. A Hip-Joint, in which the head and neck of the femur have been completely absorbed. The margins of the acetabulum, also, have been absorbed, and its cavity has been filled up: so that in its place there is only an oval, flat, rough surface, with which the corresponding surface of the femur remaining between the trochanters was in contact. The two surfaces were exactly adapted to each other, and covered by a substance like cartilage, so as to form a sort of joint, around which a thick capsule extended. II. 21

These changes may be regarded as the results of healing after destructive ulceration.

636. The bones of a Hip-Joint, in which there has been ulceration of the acetabulum and of the head and part of the neck of the femur. The ulcerated surfaces appear to have healed, and were closely adapted. The femur is adducted and extremely flexed. B. 8

(In Case G.)

Presented by Richard Partridge, Esq.

637. The bones of a Hip-Joint, in which the head and neck of the femur and the brim of the acetabulum have been destroyed by ulceration. The ulcerated surfaces have healed. The femur was not displaced: the remains of its neck appear to have rested in the acetabulum, and the trochanter minor in the foramen ovale. The bones are very slender, but their tissue appears healthy. B. 3

(In Case G.)

638. Pelvis and Femora, from a young man. The head of the femur and the acetabulum on the left side exhibit changes consequent on long-continued disease of the hip-joint. The acetabulum is wider and shallower than is natural: and the head of the femur, deeply ulcerated, has wholly lost its natural form. The ulcerated surfaces had healed, and the bones were united by a soft tissue which permitted a slight degree of motion between them. The left os innominatum and femur, atrophied and ill-developed, probably in consequence of their disuse, are considerably thinner and smaller in all their dimensions than the bones of the opposite side; and the left side of the pelvis is contracted by the nearly vertical position of the ilium. B. 45

(In Case G.)

Vide also the following Specimens.

ANCHYLOSIS.—FIBROUS ANCHYLOSIS.

639. Section of a Knee-Joint, the articular surfaces of which are united by false membrane and bone. The patella is united to the inferior part of the outer condyle of the femur, and their respective cancellous tissues have coalesced. The tibia and fibula are drawn backwards under the femur. The external lateral ligament is changed in its direction and elongated. II. 29

The other section of the joint is preserved in No. 656.

Vide Nos. 629, 631.

OSSEOUS ANCHYLOSIS.

640. A Scapula and a Humerus united by bone. The head of the humerus has

disappeared, and the upper part of the shaft is fixed by an irregular growth of bone to the remains of the glenoid cavity and the base of the coracoid process. The spine and the inferior border of the scapula are thickened. B. 50

(In Case G.)

641. The bones of an Elbow-Joint, in which all the articular surfaces are united and surrounded by bone. The joint is in the semi-flexed position. B. 29

(In Case G.)

642. Sections of the bones of an Elbow-Joint, in which there is complete osseous anchylosis between the humerus and ulna. B. 30

(In Case G.)

643. The bones of an Elbow-Joint, exhibiting a complete and smooth osseous anchylosis of their articular surfaces. The bones are sound in texture. B. 39

(In Case G.)

644. The bones of a Carpus, with two of the Metacarpal Bones. There is osseous anchylosis of the metacarpal bones with the carpus, and of the several carpal bones with each other. A fracture of one of the metacarpal bones, which has been united, but with much displacement, probably preceded the disease of the articular surfaces. B. 36

(In Case G.)

645. The bones of a Finger. There is osseous anchylosis, with slight lateral displacement, of the bones of the first and second phalanges. B. 33

(In Case G.)

646. An Os Innominatum and a Sacrum united by a bridge of bone, an inch wide, extending across the front of the right sacro-iliac symphysis. The symphysis itself appears to have been healthy. B. 55

(In Case G.)

647. A similar Specimen; but the bridge of bone is much wider, extending from the upper edge of the sacrum to the margin of the superior aperture of the pelvis. B. 56

(In Case G.)

648. A similar Specimen. The bridge of bone here extends across both the upper and lower parts of the front of the sacro-iliac symphysis; and it also appears as if portions of the surfaces of the symphysis itself are united by bone. B. 57

(In Case G.)

649. The bones of a Hip-Joint, in which the head of the Femur rests partly in the acetabulum and partly upon the ilium, and in this situation has become firmly and smoothly united by bone. In this, as in the preceding specimen, all the bones are of natural weight and hardness. The acetabulum is deeply ulcerated. B. 5

(In Case G.)

650. Sections of the bones of a Hip-Joint, exhibiting complete osseous union of the head of the femur with the acetabulum. Their walls and cancellous tissue have coalesced, and are uninterruptedly continuous. The femur is fixed in a position of adduction and extreme flexion. There are traces of healed ulceration through the bottom of the acetabulum into the pelvis. B. 2

(In Case G.)

651. Bony Anchylosis of the Hip-Joint, with extreme flexion and adduction of

the femur. The scar of an ulcerated aperture in the floor of the acetabulum is seen on the inner aspect of the innominate bone.

(In Case G.)

652. The bones of a Hip-Joint, in which the head of the femur, after extensive ulceration, had been displaced upwards and backwards by the absorption of the margin of the acetabulum, and was then fixed by bony anchylosis. The acetabulum is filled by bone, which has coalesced with a large growth of new bone from the lower surface of the neck of the femur. The ilium is thickened by expansion of its walls, chiefly on its ventral aspect. The femur is in a position of flexion and extreme adduction. B. 1

(In Case G.)

653. The bones of a Hip-Joint, in which the head of the femur, after superficial ulceration, has been displaced on the posterior border of the acetabulum, and is there firmly united by bone. New bone has also been formed on all the adjacent parts of the os innominatum. The acetabulum was deeply ulcerated. B. 4

(In Case G.)

654. The bones of a Hip-Joint, exhibiting an osseous anchylosis of the head of the femur to the ilium, similar to that shown in the preceding specimen. A thin band of bone, half an inch wide, extends between the trochanter major and the upper part of the tuberosity of the ischium. B. 6

(In Case G.)

655. The left Knee-Joint of a woman, aged 27, in which disease had existed for seven years subsequent to an injury. The tibia and fibula have been slightly displaced outwards and backwards. The patella is rough from deposit of new bone, and is firmly united to the outer condyle of the femur. The tibia is united by bone to the femur. The natural structures of the joint have entirely disappeared. Here and there soft material existed between the ends of the bones similar to ordinary granulations. B. 59

(In Case G.)

656. Section of the bones of a Knee-Joint, exhibiting osseous anchylosis of their articular surfaces, with displacement of the tibia. B. 41

The other half of the joint is preserved in No. 639.
(In Case G.)

657. The Bones of a Leg with the lower end of the Femur. The head of the tibia is fixed by firm osseous anchylosis to the articular surfaces of the femur and fibula. The shafts of the tibia and fibula are curved outwards. The wall of the tibia is irregularly thickened, and on the anterior and upper part, near the knee-joint, there is a rough and porous elevated surface of new bone. Over this surface there had long been an ulcer extending down to the bone. B. 49

(In Case G.)

658. The bones of a Knee-Joint, in which the inner condyle of the femur was united by bone to the inner border of the articular surface of the tibia. The remainder of both the articular surfaces appears healthy. The bones are light. B. 24

(In Case G.)

659. A section of the Bones of an Ankle-Joint. There is complete osseous anchylosis between the tibia and fibula and the astragalus.

From a woman, aged 23, who had suffered for seven years from strumous disease of the ankle and tarsus. The disease had never been either acute or very extensive, but it was sufficient to have prevented her walking on the limb. Amputation through the lower third of the

leg was performed at the patient's earnest request, after she had been for some months in the Hospital, during which period very little appreciable improvement had taken place.

660. A section through the Tibia, Os Calcis, Scaphoid, and the remains of the Astragalus, taken from a boy, aged 11 years. Osseous anchylosis has taken place between these bones. A carious tunnel, about one inch deep, extends along the outer side of the astragalus. Four years before his death the greater part of the astragalus and upper part of the os calcis were removed by the gouge for caries.

661. A portion of the lower part of a Tibia, divided in an anterio-posterior direction. At the margin of the articular surface the cartilage has been partly absorbed and the cancellous tissue is exposed. In the centre there is a thin scale of bone firmly adherent to it. II. 83

From a boy aged 14, who, after a neglected fracture of the fibula, suffered extensive necrosis of the bones, and inflammation of the ankle-joint. He became so reduced by suppuration and surgical fever that amputation through the knee was performed five weeks after the original injury, and one month after the ankle-joint became involved. On examination the bones were found inflamed and very vascular. Anchylosis had already so far advanced that in parting the astragalus and tibia the thin scale that is seen on the surface of the tibia came off from the articular aspect of the astragalus. The case is related in the *St. Bartholomew's Hospital Reports*, vol. iv, 1845.

662. The Tibia, Fibula, and Astragalus of a man, divided longitudinally, showing osseous anchylosis, the result of inflammation following an injury four years previously. The bones are rarefied, but the tibia above is thickened. A portion of necrosed bone lies loose in the medullary cavity at the lower extremity of the tibia.

(In Case G.)

663. The inner side of a Right Foot, showing a longitudinal section at the level of the division between the second and third toes. There is complete bony anchylosis of the ankle-joint and of the articulation between the astragalus and os calcis. The tibia, astragalus, and posterior part of the os calcis are condensed by inflammation, but otherwise appear healthy. The anterior portion of the os calcis is carious. The astragalo-scaphoid joint is normal. All the other tarsal and tarso-metatarsal joints are more or less affected; the synovial membrane is pulpy. The tarsal bones are soft and fatty, and were deeply congested.

From a man aged 33. The anchylosis was the result of an injury sustained sixteen years before the foot was amputated in the lower third of the leg for strumous inflammation of the anterior tarsal bones.—See *Pitcairn Ward Book*, vol. v, p. 111, and *Henry Ward Book*, vol. iii, p. 86.

For other Specimens of Anchylosis see Nos. 617, 618, *Series I Nos.* 190, 40, *and Series III Nos.* 823, 834, 835.

CHANGES DUE TO RHEUMATOID ARTHRITIS.

664. The base of a Skull, exhibiting disease in the right articulation for the Lower Jaw. Ulceration, commencing in the surface of the glenoid cavity, has extended both widely and deeply in the adjacent bone, and new bone is formed around the ulcerated surface. II. 27

665. Portion of the base of a Skull, exhibiting partial absorption of the surface of the glenoid cavity, the effect of disease in the articulation of the lower jaw. II. 42

666. A Shoulder-Joint, in which there has been degeneration and removal of the articular cartilage, with hardening of the subjacent bone. The capsule is generally thickened, and there are numerous groups of small pendulous processes, and two larger masses of calcifying fibro-cartilage attached to its internal surface. II. 22

667. A Scapula, showing the effects of Rheumatoid Arthritis. The glenoid cavity is entirely destroyed, and in its place there is a rough semilunar surface of bone, upon which the humerus moved: the upper horn is bifid, and formed by the acromial and coracoid processes; the lower by a process of bone about one and a-half inches long, projecting from the inferior margin of the scapula. The extremity of the acromial process is separated from its base. I. 350

Removed from the body of a man who was brought to the hospital for dissection. No history of the case could be obtained. The opposite shoulder and both hip-joints were also affected in a similar manner, but to a much less degree.

(In Case G.)

668. A Shoulder-Joint, exhibiting partial absorption of the head of the humerus and glenoid cavity, with flattening and a great increase of the width of their articular surfaces. The surfaces of the scapula and humerus, which were brought into contact by the absorption, are exactly adapted to each other, and are covered by a substance like cartilage, so as to form a new joint. It is probable that these changes were the result of rheumatoid arthritis. III. 1

669. The bones of both the Shoulder-Joints of an adult. In each joint there has been ulceration, or such absorption as occurs in chronic rheumatism, of the articular surfaces of the head of the humerus and the glenoid cavity. The heads of the humeri are flattened and enlarged by growths of bone around their borders; and the glenoid cavities, enlarged in a corresponding degree, and deepened, extend backwards and inwards to the bases of the spines of the scapulæ. The articular surfaces thus enlarged are mutually adapted, and are hardened, perforated, and in some parts polished and ivory-like. The changes of structure are symmetrical, except in that the articular surfaces of the right shoulder-joint are more extensively polished than those of the left. B. 32

(In Case G.)

670. A Scapula and the upper part of a Humerus diseased in the same manner as No. 706. The borders of the acromion are thickened and beset by nodules of new bone. A small portion of its inferior surface, indurated and polished, was adapted to a similar surface on the upper part of the head and the great tuberosity of the humerus. Around the head of the humerus and on its tuberosities there are deposits of bone similar to those on the borders of the acromion. B. 52

(In Case G.)

671. A Humerus, with the Radius and Ulna. In consequence of chronic disease of the elbow-joint, the fore arm appears to have been for a long time nearly fixed in a position of extreme flexion, with the hand in extreme pronation. The articular surface of the humerus is much deformed; the internal condyle is reduced in size and pointed; the trochlear cavity is nearly obliterated; the greater part of the articular cartilage was removed; the external condyle has a part of its surface hardened and polished; and nodules of new bone have been deposited around the borders of the articular surface. The outer division of the greater sigmoid cavity of the ulna is hard, polished, and superficially grooved: the inner division is soft and rough as if it had been deeply ulcerated. The lesser sigmoid cavity is obliterated; and just below its position there is a large and deep pit in which the tubercle of the radius rests. The head of the radius is directed backwards from the shaft. The articular surface has lost its cartilage, and new bone is deposited around a great part of its border. The anterior border of the head of the radius, which rested on the front of the external condyle of the humerus, has formed a wide and slightly concave surface, which is covered by hard polished bone, like that on the surface of the condyle itself. The lower ends of the shafts of the radius and ulna are healthy. B. 53

These changes were probably the result of rheumatoid arthritis.
(In Case G.)

672. Parts of the Ulnæ of an old woman. An exactly similar portion of the articular cartilage of each ulna has been absorbed: and the space thus left on the surface of each is filled by a vascular growth like a process of the synovial membrane. II. 47

The specimens are represented in the *Medico-Chirurgical Transactions*, vol. xxv, pl. ii, f. 1, 2; where they are also described by Sir J. Paget, together with Nos. 580, 581, 595, 708, in this Series; Nos. 404, 405, in Series I; and other specimens of symmetrical disease.

673. Portions of a Radius and an Ulna. There has been ulceration of the surfaces by which they articulated. The ulcerated surfaces, hardened and polished, have become remarkably grooved and adapted to each other, so that the new joint which they form may have permitted a very free movement of the radius upon the ulna. The surface by which the ulna articulated with the overhanging border of the radius is similarly polished: the carpal surface of the radius is healthy. B. 37

(In Case G.)

674. A Hip-Joint. In consequence of Rheumatoid Arthritis the acetabulum is greatly enlarged and has assumed an oval form. The head of the femur is enlarged and adapted in its form to the acetabulum. All the articular cartilage is removed, and the surfaces of the bones are smooth, hard, and polished. The capsule of the joint is thickened, and upon its internal surface around the neck of the femur there are several groups of slender pendulous growths. II. 20

675. A Hip-Joint, in which there are portions of hard cartilaginous and osseous substance. They are fixed to the inner surface of the capsule, and to the anterior part of the neck of the femur, by adhesions of tough fibrous tissue; their contiguous surfaces are exactly fitted to one another, and they form a nodulated, oval mass, nearly three inches long, one surface of which rested upon and was adapted to the neck of the femur. The capsule is thickened, and its interior is beset with slender pedunculated processes. II. 56

From a woman upwards of 70 years old. The mass formed a distinct tumour projecting in the groin.

676. Sections of the head, neck, and part of the shaft of a Femur. The neck of the bone is considerably shortened, and there is irregular osseous deposit upon its external surface. III. 45

It is uncertain whether these changes were consequent on injury. The external appearance of the bone might indicate that there had been a fracture of the neck; but the uniform character of its tissue, as shown on the surface of the sections, is opposed to such a conclusion.

677. A section of the upper part of a Femur, from a man who had for four years suffered with rheumatic pains in and about the hip. A large portion of the articular cartilage has been completely removed from the middle of the head of the femur. The bone thus exposed is unnaturally hard; its surface is polished, and the morbid hardness extends for about a line in depth. Of the remaining cartilage, some is softened, thick, succulent, and nodulated on its surface, while that round the margin of the exposed bone is very thin; other parts, again, are marked with grooves, like wrinkles, radiating to the outer margin of the head; and others are converted into a fibrous tissue, which hangs in shreds from the surface of the bone. New bone, in hard irregular nodules, is formed around the margin of the head, and on the neck of the femur. II. 8

From the patient from whom the specimens of medullary disease of the ilium, in the preceding Series, Nos. 501 to 504 were taken.

678. The bones of a Hip-Joint. The depth of the acetabulum is increased by absorption of its base, and by ossification of the cotyloid ligament. The articular surface of the femur is in part removed by absorption; and there is a rough, nodulated formation of new bone around the margin of the head and on the neck of the femur. The surfaces of the acetabulum and head of the femur on which absorption has taken place, are rough, hard, and deeply and irregularly perforated, like worm-eaten wood: parts of the remains of their articular surfaces are hardened and polished. B. 7

(In Case G.)

679. The upper portion of the Left Femur and the Acetabulum from a male subject brought to the dissecting rooms. The shape of the articulating surfaces is much altered; they are flattened, and there is abundant osseous deposit about the head of the femur, and, to a less extent, about the margin of the acetabulum; the result probably of rheumatic disease. B. 61

(In Case G.)

680. Sections of the bones of a Hip-Joint, in which there has been absorption of the upper part of the head of the femur. The surface of the part thus absorbed, as well as that of the acetabulum with which it was in contact, and on which it probably moved freely, are polished, ivory-like, and perforated like those in specimen No. 683. B. 12

(In Case G.)

681. The bones of the Hip-Joints of a man aged 71, exhibiting nearly symmetrical changes of structure; the effects of chronic rheumatism. There is an irregular and very abundant deposit of osseous substance around the margins of the acetabula and upon the borders of the heads and necks of the femora. Both the width and the depth of the acetabula are thus greatly increased; their articular surfaces, as well as those of the femora, are hard and rough, and a portion of the head of one femur with the corresponding surface of the acetabulum is polished and ivory-like. B. 43

(In Case G.)

682. The bones of a Hip-Joint, exhibiting an irregular, nodulated deposit of osseous substance upon the margins of the head of the femur, and of the acetabulum. The articular surfaces thus enlarged have been deprived of their cartilage, and are hardened, polished, and very irregularly and deeply perforated. B. 42

(In Case G.)

683. Sections of the bones of a Hip-Joint, in which portions of the articular surfaces of the acetabulum and of the head of the femur have become finely polished and of an ivory-like texture. The polished portions are deeply penetrated by numerous minute irregular canals; and there is abundant formation of new bone around the margin of the head and on the neck of the femur, as well as about the margin of the acetabulum. B. 11

(In Case G.)

684. Sections of the bones of a Hip-Joint, in which the depth of the acetabulum is increased by the deposit of osseous matter around its margin. Its articular surface, and that of the head of the femur, have been absorbed, and the surfaces exposed are hard, perforated, and in a few parts polished. A formation of new bone round the margin of the head of the femur corresponds with that on the margin of the acetabulum. B. 16

(In Case G.)

685. Portion of a Femur, exhibiting absorption, hardening, and polishing of the upper and anterior part, with osseous deposit around the margin, of its head. B. 17

(In Case G.)

686. Portion of a Femur, in which the upper part of the head has been absorbed, flattened, and increased in width. Part of the surface absorbed is hard, polished, and perforated: new bone is formed on other parts. B. 20

(In Case G.)

687. Portion of a Femur, exhibiting absorption of the upper part of its head, with a considerable formation of new bone around the margin of the head and on the neck. The bone is very light. B. 13

(In Case G.)

688. Portion of a Femur, in which the neck of the bone appears to have yielded while in a softened condition, so as to permit the head to be carried backwards nearly into contact with the posterior part of the trochanter major. The bone is light, and parts of it are brittle. B. 21

(In Case G.)

689. Portion of a Femur, the head of which is deformed by the flattening of its upper half and the enlargement of its border: the neck, also, is shortened. B. 40

This and the two preceding specimens closely resemble each other; it is probable that these changes were due to rheumatism.

(In Case G.)

690. A left Knee-Joint, showing the early changes of Chronic Rheumatic Arthritis. The cartilages are fibrous and in places soft and filamentous; the articular surfaces are uneven and fissured, and at the margins there is an overgrowth of cartilage producing an irregular overhanging edge with nodulated outgrowths. These changes are most marked on the femur, especially on its trochlear surface. The synovial membrane is thickened and fibrous; there were numerous adhesions between it and the margins of the articular surfaces. Passing between the inter-condyloid notch of the femur and the spine of the tibia are numerous broad bands of adhesion, which oppose an effectual resistance to complete flexion. The patella is much thickened, especially at its lower and outer part, where it reaches the thickness of an inch and a-half. The lower end of the femur also appears thickened.

The specimen was taken from a man aged 35 years, who died of chronic peritonitis, following ulcer of the stomach. None of the other articulations were affected.—See *Post Mortem Book*, vol. vii, p. 202.

691. A Knee-Joint, exhibiting numerous growths on its internal surface. The growths are of various sizes, nodulated, grouped, and attached, for the most part, by narrow pedicles. They are most abundant about the margins of the articular surfaces of the bones. Some of them are cartilaginous, others osseous; and there are some which consist of fibrous tissue covered by a thin membrane, like a reflection of the synovial membrane. The heads of the bones are enlarged, their articular cartilages are removed, and the exposed surfaces are hard and polished. II. 28

The disease had existed for more than two years with signs of chronic inflammation of the synovial membrane. There were four ounces of fluid "like train oil" in the cavity of the joint. The patient recovered completely after the amputation of the limb.

Presented by Thomas Fereday, Esq.

692. Portion of a Knee-Joint, with various growths from the internal surface of its synovial membrane. Most of these growths consist of fringes of slender

and leaf-like processes of a soft fibrous structure : others are firmer and approach to cartilage in their character ; and one is a flattened, nodulated growth of bone covered by a thin membrane. The other structures of the joint appear healthy. II. 34

693. The articular surfaces of a Knee-Joint, showing the changes consequent on Chronic Rheumatoid Arthritis. The synovial membrane, when opened, was of a deep port wine colour.

The parts were removed in resection of the joint from a man, aged 35 years, who had suffered from pain in the knee for three years ; the joint had been swollen for eighteen months. He died from pyæmia. A portion of the spine affected with rheumatoid arthritis is preserved in Series V, No. 1085.—See *Rahere Ward Book*, vol. vii, p. 126.

694. The lower Articular Extremity of a Femur. There is a small patch of fibrous degeneration with erosion of the cartilage covering the internal condyle, and commencing nodular outgrowths spring from the margin of the cartilage of both condyles.

The synovial membrane was normal. A portion of the spine was considerably affected with rheumatic disease, and the metatarso-phalangeal joints slightly. The patella is preserved in Series VI, No. 1216.

695. Sections of the lower extremity of a Femur. A quantity of cancellous bone has been formed on the articular aspect of the cartilage. The latter, though absent at certain parts, retains, in its chief extent, its natural appearance and position. The new bone seems to have originated in a growth external to the old, to the surface of which, and to the articular cartilage, it has become inseparably connected.

The specimen was taken from a subject in the dissecting-room. The joint presented the appearances of rheumatoid arthritis.

Presented by T. Smith, Esq.

696. The Bones forming a Knee-Joint. Their surfaces are irregular, and rough, from an abundant formation of compact, new bone. Other portions of bone were scattered amidst the thickened tissues, which surrounded the articulation, and which had amalgamated into a coarse fibrous structure. The changes had been preceded by chronic rheumatic arthritis. B. 58

(In Case G.)

697. The Bones of the Shoulder, and of both Knee-Joints of an old woman who was brought to the dissecting rooms. Their articular surfaces present the ordinary appearances of chronic rheumatoid arthritis ; and besides, the femora are marked by ridges and grooves which run in a longitudinal direction, and correspond with similar ones on the wider surface of the patella. Several of the joints were affected by the disease, but none were grooved in this manner.

(In Case G.)

698. Bones of two Knee-Joints from the same person. There has been rheumatic disease in each joint, occasioning a deposit of new bone around the articular surfaces of both the femur and the patella. The patellæ, displaced outwards, have been adapted to the outer condyles; and their articular cartilages having been completely removed, the opposite surfaces of the bones have been absorbed in regular and mutually adapted grooves, and are hardened, polished, and ivory-like. B. 47

(In Case G.)

699. The bones of the Great Toes of an old person, showing the effects of Chronic Rheumatism. The articulated bones exhibit abnormal eversion of the phalanges ; those that are separated, the usual changes of structure upon and around the articular surfaces. Many large portions of the articular layer of bone are

penetrated by ulcers extending deeply into the cancellous tissue, and having irregular rounded edges. The intervening portions of the articular layer are smooth and slightly polished. Around the articular borders and on the sesamoid bones new bone is formed in irregular nodules. The shafts of all the bones appear healthy. II. 65

700. The Bones of a Great Toe, in which, probably in consequence of chronic rheumatism, the articular surfaces of the metatarsal bone and first phalanx are in part destroyed, and there is an abundant deposit of hard nodulated new bone around their borders. II. 38

701. The Bones of two Toes, exhibiting ulceration of their articular surfaces, and growths of bone around and near their articular borders; the effects probably of rheumatic disease. B. 35

(In Case G.)

For Specimens of Rheumatic Disease of the Articulations of the Spine, see Series V, Nos. 1085 *et seq.*

SHOULDER-JOINTS, PROBABLY AFFECTED WITH RHEUMATOID ARTHRITIS, IN WHICH THE TENDON OF THE BICEPS HAS BEEN WORN THROUGH.

702. A Shoulder-Joint. The capsule is thickened: in its upper part is an irregular opening, and the tendon of the supra-spinatus is here seen to have been separated from the tuberosity of the humerus. The tendon of the biceps is attached to the upper part of the bicipital groove; the intra-capsular portion appears to have been worn through, for a portion of it, in shreds, remains attached to the edge of the glenoid cavity. Numerous villous tufts and dendritic filaments project from the inner suface of the capsule, and the articular cartilage of the humerus is thinned, stained, and fibrous-looking in the centre. III. 59

703. The other Shoulder-Joint of the person from whom the preceding specimen was taken. The capsule is thickened. The tendon of the biceps, separated from the glenoid cavity, has become firmly adherent to the bicipital groove, and an irregular nodulated deposit of bone has taken place around the part to which it is now attached. A slight overgrowth, as a continuation of the deposit, has taken place at the margin of the articular cartilage, which appears fibrous, and has lost its polish. A few clumps of dendritic filaments are seen springing from the inner surface of the capsule. III. 60

The changes described in this and the preceding specimens are apparently due to rheumatoid arthritis.

704. The Upper Extremity of a Humerus. The tendon of the biceps is attached to the bicipital groove, and lesser tuberosity of the humerus. A low nodular overgrowth has taken place at the margin of the articular surface, probably as the result of rheumatoid arthritis. V. 10

705. A similar Specimen. An overgrowth described in the preceding is here more marked, and in addition there is a circular patch of dry caries in the centre of the articular surface. V. 11

These are probably the specimens referred to by Mr. Stanley in a paper on "Rupture of the tendon of the biceps," *Medical Gazette*, vol. iii.

706. A Humerus and a Scapula. There is a deposit of bone upon the end of the acromion, presenting an excavation on its under surface. The great tuberosity of the humerus presents a convex surface, which appears to have been adapted to, and to have moved upon, the concavity on the under part of the acromion. B. 44

It is probable that these changes followed the destruction of the tendon of the biceps muscle, either by disease or by accidental rupture.

This specimen precisely answers to the description of, and is probably that, described by Mr. Smee in the *Lancet*, 1845. The intra-capsular portion of the tendon of the biceps was worn through, and the tendon was attached to the bicipital groove ; in consequence of which the head of the humerus was drawn up against the acromial process.
(In Case G.)

CHANGES IN JOINTS DUE TO GOUT.

707 and **707a.** The hands of an old woman who was brought to the hospital for dissection. The fingers are bulbous and extremely short, and a section shows that the soft tissues are laden with urate of soda. Many of the large joints of the body were affected with chronic rheumatic arthritis. No history of the case before death could be obtained.

DEPOSIT OF URATE OF SODA ON THE CARTILAGES.

708. The articular portions of two Femora and two Patellæ from the same individual. A deposit of urate of soda, the effect of gout, has taken place upon the surface of their articular cartilages. II. 33

709. An Os Calcis and an Astragalus (probably from a gouty person), the articular surfaces of which are uniformly covered by a thin deposit of white earthy matter, consisting principally of urate of soda. The cartilages themselves are thin. II. 10

710. A Patella, the cartilage of which is whitened by a similar deposit. The bone appears also thickened and nodular. II. 11

The two preceding specimens were taken from a man between 40 and 50 years old. Nearly all the joints in the body were in a similar condition ; in some, a portion of the white substance was in a fluid state, and around some there was a similar condition in the adjacent tissues.

711. The Distal Phalanges of a Great Toe, with an extensive deposit of urate of soda in and around the joint.

A large calculus in Series LII was taken from the same patient.

LOOSE BODIES IN JOINTS.

ATTACHED TO THE SYNOVIAL MEMBRANE.

712. Portion of an Elbow-Joint, in which there are several cartilaginous growths from the internal surface of the capsule, immediately above the olecranon. Two of these are closely attached to the capsule. A third is attached to it by a round and thin pedicle, apparently formed by the synovial membrane. One portion of cartilaginous substance, which was found loose in the joint, is at the bottom of the bottle. II. 39

713. A Loose Cartilage, removed by the subcutaneous operation, from the Knee-Joint of a young man. The cartilage is of a flattened discoid shape ; attached to it are the remains of the pedicle by which it was connected to the bone.

714. A Loose Cartilage, removed from the Knee-Joint. This body was not contained loose in the cavity of the joint, but was attached, and was removed only after its base had been divided.

715. A disc-shaped mass of Cartilaginous Substance, with a nodulated border, which was removed from the interior of the knee-joint of a young man. It is suspended by a portion of cellular tissue, by which it had probably been at one time attached to the synovial membrane. XXXV. 37

716. A Patella, to the inner side of which a pedunculated mass of a fibrous structure is attached. xxxv. 117

DETACHED FROM THE SYNOVIAL MEMBRANE.

717. A Loose Cartilage, removed from the Right Knee-Joint of a boy, aged 15 years. Symptoms of its presence had existed for five years.

718. A flattened oval mass of Cartilage, smooth on one surface, nodulated on the other, which was removed from a Knee-Joint, in which it was loose. The central part of the mass appears to be osseous. II. 25

719. A similar, but rather smaller Specimen, in which there are also specks of osseous substance in the centre. II. 26

720. A Loose Cartilage, which was extracted, through an incision made over it, from the left Knee-Joint of a young man, aged 17, in whom it had existed,—occasioning the usual symptoms,—for nearly two years. No bad effect followed the operation.

DETACHED PORTIONS OF THE ARTICULAR SURFACES.

721. Two portions of Cartilage, removed from the Knee-Joints of a lad, 18 years old. They are almost exactly alike in form and size, each resembling such a piece of cartilage as might be obtained by removing that which covers the posterior surface of one of the condyles of a femur; and each, as such a piece would be, is smooth and polished on its convex, and rough on its concave, surface. xxxv. 55

There was an interval of about a year between the operations by which these bodies were removed from the joints. The patient recovered from both the operations without a bad symptom.

Presented by Luther Holden, Esq.

722. A Loose Cartilage, removed by the subcutaneous method, from a Knee-Joint. It consists of a layer of cartilage and a layer of bone intimately connected with each other. The cartilage is smooth and glistening on its free surface, like ordinary articular cartilage; in profile it is seen to have the thickness of the layer that encrusts the condyles of the femur in a healthy adult. Its margins are irregular and cancellous. Examined with a microscope, the cartilage was found to be precisely like articular cartilage. In its deeper layer the cells lie with their long axis at right angles to the subjacent bone, while towards the free surface they are small, flattened, and with their long axis parallel with the surface. The bone presents the characters of true osseous tissue.

The patient, a bargeman, aged 27, had suffered severely with the ordinary symptoms of loose cartilage in the joint. He was not aware of having injured his limb. He recovered without a bad symptom after the operation.—See *St. Bartholomew Hospital Reports*, vol. iv, p. 256.

MASSES SEPARATED FROM THE ARTICULAR MARGIN IN RHEUMATOID ARTHRITIS.

723. Numerous irregularly nodulated masses of partially ossified fibrous Cartilage from a Hip-Joint.

EXCISION OF JOINTS.

724. The upper part of a Humerus excised for the remedy of disease in it and in the shoulder-joint. The whole of the articular surface of the bone is ulcerated.

The ulceration is nearly all superficial and uniform, but near the attachment of the capsule are two more deeply ulcerated parts. Beyond the attachment of the capsule, the surfaces of the tubercles and of the shaft, which for half an inch below them was removed in the operation, are covered with a thin layer of new bone. The whole texture of the bone is light and fatty, but in other respects appears healthy. II. 60

725. The Elbow of a girl, aged 20. The Joint was excised for strumous disease ten months previous to the removal of the limb. The operation was performed in a provincial hospital and extreme care seems to have been taken of the limb after its performance. The girl came to the hospital seven months afterwards. The arm was useless, the fore-arm falling when not supported. The fingers were stiff and their motions all but lost. The thumb could be moved with tolerable precision. The sensation of the inner part of the limb was impaired, and the entire limb was colder than its fellow. It was also manifestly smaller, and was just an inch shorter. The parts around the joint seemed sound; the cicatrix was soundly healed, and the limb could be moved in any direction without pain, or any evidence of roughened bone within. After three months' perfect rest on a splint, with great attention to the general health without improvement, the limb was removed. The muscles around the joint were firm, of good colour, and not evidently smaller than in health. The biceps and brachialis anticus were natural, and at their insertion had contracted new adhesions. The triceps was adherent to the lowest remaining portion of the humerus, especially on the outer side, and its tendon could be traced on to the ulna. This muscle, unlike its antagonists, was pale and wasted, with much fat between its fasciculi. The extremities of the bones were surrounded by a tough, firm capsule, most marked anteriorly. The capsule was much strengthened by a thick fibrous cord extending from the internal condyloid ridge to the coronoid process of the ulna, and the flexor muscles had in part their origin from it. The ulnar nerve could be traced to the internal condyle but no farther, the nerve there blending with tough, matted, fibrous tissue. An inch beyond this point there was an appearance, but not a satisfactory one, of a continuation of the nerve. The capsule, when opened in front and turned back, was found composed of dense fibrous tissue attached to the margins of the divided bones. Its surface, in places, was smooth and glistening. There was no fluid of any kind within. The cut surface of the humerus was covered everywhere with fibrous bands passing into the capsule. This was more apparent behind than in front. The cut surface of the radius was covered with some thin delicate fibres running into the capsule at the margins of the bone. These when removed showed the cancellous tissue imperfectly walled in. The surface of the ulna, however, was merely covered with a thin smooth layer, and except at the margins, had no attachment to the capsule. Here the extremity of the bone had been covered with a continuous layer of new bone. There were no bands of fibres which could be traced running from the humerus to the bones of the fore-arm.

726. The excised articular portions of the bones of an Elbow-Joint. Their articular surfaces are all ulcerated, and, in the humerus, the ulceration has extended deeply, destroying considerable portions of both its condyles, and of the trochlea between them. The ulcerated surfaces are hard, and, in parts, smooth, as if the ulceration had not been progressive at the time of the excision. The surfaces of the bones not included in the joint are thinly covered with new bone. II. 61

The patient was a girl about 20 years old. The disease of the joint had long existed, and was attended with suppuration through fistulous passages. After the excision she recovered good use and mobility of the elbow.

727. An Olecranon Process excised from a diseased Elbow-Joint. Its articular surface is ulcerated, like those of the bones last described, and, at its centre, it is completely penetrated by a large oval ulcerated passage. II. 62

In this case, the other bones of the elbow-joint appeared but little diseased, and it was judged unnecessary to excise them. The wound of the operation slowly healed, and the patient, a young man about 20 years of age, regained a moderately good use of the joint.

728. The Wrist of a man, aged 28, from which, eight years previously, the greater number of the carpal bones were removed on account of strumous disease of the joint. The hand retained very considerable power of flexion and extension. With the exception of the trapezium, pisiform, unciform, and part of the cuneiform bones, the carpal bones have been removed. These and the metacarpal bones have become adapted to the articular surfaces of the radius and ulna, and united to them by dense fibrous tissue, admitting of some motion at this part. This bond of union has been divided. The remaining bones appear healthy.

729. The head and the fragments of the neck of a Femur, excised in a case of disease of the hip-joint. The articular cartilage is removed by ulceration, and granulations and shreds of soft lymph cover the ulcerated surface of the head of the femur. The texture of the bone is soft, and in the recent state was deeply ruddy. The cancellous spaces are in many parts filled with inflammatory products.

The patient, a boy 12 years old, had suffered long and severely with suppurative disease of the hip-joint, and was exceedingly reduced by profuse discharge from abscesses round it. The removal of the head of the bone was followed by marked recovery of strength and general health, and by closure of most of the abscesses and sinuses about the joint. The articular surface of the acetabulum was in the same state as that of the head of the femur.

730. Sections of the head and neck of a Femur excised from a diseased hip-joint. The articular cartilage is almost entirely removed by ulceration; but that of the epiphysis appears healthy. The head of the femur is superficially, and in one portion more deeply ulcerated; its remaining substance is yellow, hard, and solidified. The substance of the neck is very soft; it could be compressed with the finger, and its cancellous tissue is filled with inflammatory products.

731. The great Trochanter, with a portion of the shaft, and the remains of the neck of a Femur, excised from a girl with disease of the hip. The head and about one-third of the neck of the femur were destroyed by ulceration. The remains of the neck, the whole substance of the trochanter, and of the removed portion of the shaft, are extremely atrophied, soft, light, and thinly walled. II. 63

732. A Knee-Joint, upon which the operation of Excision had been performed. The tibia is displaced considerably backwards. The bones are loosely united together by fibrous tissue, but no osseous union has taken place.

733. A Knee-Joint, on which the operation of Excision had been performed a considerable time before death. The tibia is displaced backwards and outwards from the femur. A considerable formation of new bone has taken place by which the femur and tibia are firmly united.

The patient had been able to walk well with the limb.

734. Section of the bones of a Knee-Joint, seven years and a half after excision. The bones are firmly united by osseous union, but the tibia is in a position of slight flexion, and inclined outwards.

From a boy, aged 11 years. Amputation through the thigh was performed on account of the malposition of the tibia.

735. A Knee-Joint after an unsuccessful Excision. The tibia is drawn backwards behind the femur and is placed nearly at a right angle with it. Absorption has taken place where the bones are in contact; their tissue is healthy, but there is no osseous union between them.

From a boy, aged 5 years. Amputation of the thigh was performed five months after the excision.—See *Sitwell Ward Book*, vol. ii, p. 101.

736. The bones forming a right Knee-Joint, upon which a partial Resection was performed for disease of one year and a half's duration. The ends of the bones are covered by gelatinous granulations, and loosely connected by soft fibrous tissue, but there is no bony union. The tibia is at a right angle with the femur. A cavity, containing a sequestrum of cancellous bone as large as a hazel nut, occupies the lower extremity of the diaphysis of the femur. It communicates by a narrow sinus, which is cut across, with the space between the two bones. The wall of the femur around the cavity is thickened and sclerosed. A portion of the internal condyle only remains of the epiphysis of the femur; that of the tibia is preserved.

From a child, aged 4 years, whose thigh was amputated in the hospital thirteen months after the resection, which was performed in the country.—See *Stanley Ward Book*, vol. vii, p. 311.

737. A Section of the bones of a Knee on which Excision had been performed. The femur and the tibia, where they lie in contact, are firmly united by bone. A large sequestrum lies loose in a cavity in the upper end of the tibia.

The patient, a lad 14 years old, and of feeble health, underwent excision of the knee-joint, which was affected with strumous disease of long duration. Many months after the operation the knee remained large, the skin covering it was inflamed and unhealthy, and many sinuses discharged fœtid pus. Several operations for the removal of carious and necrosed portions of bone were performed from time to time. The large opening seen at the outer side of the joint was made during one of these operations, and through it the sequestrum which lies at its bottom was found, and partly gouged away. At length, as the wounds did not heal, and as the boy's general health was much reduced, amputation above the knee was performed.

738. Section of the Bones of a Knee-Joint, of which the opposite half is shown in the preceding specimen.

739. Parts removed in an operation for Excision of the Knee-Joint. In flexing the leg whilst opening the articulation, the epiphysis of the femur snapped across: the line of separation is seen in the preparation. The specimen also shows the relation of the articular surfaces modified by the backward displacement of the tibia.

The patient, a boy aged 9 years, made a favourable recovery.

FOREIGN BODIES IN JOINTS.

740. The head of a Fibula with some of the surrounding tissues. Below, firmly embedded in fat and cellular tissue, is part of a needle, about half an inch in length. The structures around are natural in appearance, and free from thickening or induration. III. 126

The needle had been driven, nine years before, into the front of the joint, when the patient was about five years old. For four years it seemed to produce no disturbance; from that time onwards there was almost constantly progressive suppurating disease of the knee-joint. The patient died, after amputation, from pyæmia.

SERIES III.

INJURIES OF BONES (Fractures).

VARIETIES OF FRACTURE.*

FISSURED.

741. Specimen of Fissured Fracture of the Skull. The right parietal bone is traversed by two converging fissures united by one that runs transversely. A fissure also extends upwards through the left parietal bone. There is no depression of the fragments. At the base of the skull two fissures extended from either side of the foramen magnum into the corresponding temporal fossæ, that on the right side being most extensive. These fissures did not unite with those seen on the vertex, and were probably produced by sudden impulsion of the weight of the body upon the occipital condyles through the cervical spine, when the vertex struck the ground.

From a child aged 4, who fell from a window on the first floor of a house. She died comatose, about three hours after the accident.
(In Case H.)

PUNCTURED.

742. Portion of a Skull, exhibiting a fracture through the posterior part of the orbital plate of the frontal bone. III. 27

The fracture was occasioned by the passage of an iron rod through the orbit into the brain. *Vide* No. 880.

OBLIQUE.

743. A very Oblique Comminuted Fracture of the left Clavicle, produced by a fall on the shoulder.

Death was caused by other injuries.

744. Vertex of a Skull, showing an extensive Fracture of the parietal bones, and, to a less extent, of the frontal. The displaced portion of the parietal pressing downwards, and acting like a wedge, has caused separation of the sutures in the immediate vicinity.

The fracture occurred three weeks before death, and scanty new bone may be seen deposited about the edges of the displaced portions, chiefly on the cerebral surface. C. 129

(In Case H.)

COMMINUTED.

745. An Impacted Comminuted Extra-Capsular Fracture of the neck of the Femur, which has firmly united. The neck of the femur is driven into the great trochanter, and has detached a large portion of it with the trochanter minor. The rotation outwards of the shaft of the femur is well shown.

* *Other Specimens illustrating the Varieties of Fracture will be found among fractures of particular bones*, p. 127.

The specimen was taken from a woman, aged 73 years, who was admitted to Lawrence Ward, having been thrown violently on to her hip, in getting out of a railway carriage.

There was no crepitus, but about one inch shortening.

The patient died seven weeks after the accident from bronchitis.

746. An Extensively Comminuted Fracture of the upper third of the femur. The fracture passes obliquely through the junction of the upper with the lower two-thirds of the shaft. A large mass of bone, which includes the outer surface of the great trochanter, the lesser trochanter, and part of the outer surface of the shaft, is separated by the fracture. The top of the great trochanter is also broken off.

747. Portion of a Femur, fractured in its lower part. The fracture extends in several directions through the lower third of the shaft a little above the condyles, and downwards between the condyles into the knee-joint. Several small portions of bone were completely detached. C. 13

(In Case H.)

748. Portions of a Tibia and a Fibula. There is a comminuted fracture of the tibia about two inches above the ankle, and two lines of fracture extend downwards into the ankle-joint. The fibula is fractured about four inches above the ankle. C. 22

Vide Nos. 979, 980.

(In Case H.)

SPLINTERED.

749. Portion of an Ulna from an adult, split and completely detached by a compound fracture which was occasioned by the arm being caught in machinery. The fractured portion, about four inches in length, comprises in its whole extent about one-half of the thickness of the ulna. III. 85

It is remarkable that the bone was splintered to so great an extent longitudinally without the fracture passing at any part through the entire thickness of the shaft. The vacancy left in the bone by the removal of this fragment was filled by granulations; but whether these granulations ossified could not be satisfactorily ascertained.

750. Portion of a Femur, which has been fractured obliquely through the middle of its shaft; a fracture extends downwards through the lower half of the shaft and through the internal condyle. C. 9

Vide No. 766, 767.

(In Case H.)

IMPACTED.

751. The Head and Neck of a Femur, from a woman aged 80. A vertical fracture extends through the base of the neck, which is driven into the upper part of the shaft. The small trochanter is also broken off from the body of the bone. The injury was caused by a fall five weeks before death. The only symptoms of fracture were inability to raise the limb, and pain on pressure. III. 135

752. Portion of a Femur, showing an impacted extra-capsular fracture of the neck of the bone. The plane of one fracture extends through the base of the neck; that of the other vertically through the trochanters, so as to separate the posterior parts of these processes and of the bone between them. The head and neck of the femur are driven downwards and impacted in the cleft through the trochanters, and in this position the fractured portions are firmly united. III. 11

Vide No. 745.

MULTIPLE FRACTURE.

753. A Rib which has been fractured in three distinct situations—at the angle and at two places in the middle of the shaft. The fractured ends are firmly united in nearly exact apposition. C. 74

(In Case H.)

754. Portions of a Femur, fractured in two places by a wheel passing over the limb. One fracture is about one-third from its upper end, and the other at the same distance from its lower end. C. 8

Vide Nos. 844, 875, 920.

(In Case H.)

COMPOUND FRACTURE.

755. The Lower End of the Femur and the Knee-Joint, from a woman aged 30. The specimen shows a compound comminuted fracture of the lower end of the femur. The sharp extremity of the broken bone had perforated the integuments a short distance above the patella. The limb was amputated about six weeks after the injury, on account of destructive inflammation of the knee-joint.—See *Lawrence Ward Book*, vol. i, p. 372.

756. A Knee-Joint, exhibiting the consequences of a fracture in the lower part of the Femur. The fracture extended transversely through the shaft a little above the condyles, and downwards between the condyles into the joint. The upper portion of the bone was forced downwards by the side of the patella, and a few days after the fracture, it protruded through the integuments, and could not be again replaced. In this situation it has become firmly fixed by bone to the condyles and the lower part of the shaft. An inch and a half of the protruding portion of the femur perished, and its separation from the living bone had commenced by the formation of a shallow groove between them. The articular surfaces of the knee-joint are anchylosed. III. 34

757. A Knee-Joint from a young subject, with an Oblique Fracture of the Femur just above the condyles. The upper portion of the femur, crossing the lower portion obliquely, has been united by bone to the back part of the outer condyle. About two inches of the extremity of the upper portion of the femur which protruded through the skin were sawn off during life. Inflammation extending to the knee-joint has produced absorption of the articular cartilages and adhesion of the opposite parts of the joint. At the bottom of the bottle is the piece of bone which was removed by the saw. III. 51

Vide Nos. 805 to 807.

SEPARATION OF EPIPHYSES.

758. The Lower Extremity of a Femur, showing a separation of the epiphysis from the diaphysis. C. 42A

From the same case as that from which No. 1056 was taken.

(In Case H.)

For other specimens, vide Nos. 909, 931, 932, 981.

SPONTANEOUS FRACTURE.

759. Portions of two Femora. The larger portion, comprising the head, neck, and upper half of the shaft of the left femur, exhibits the effects of two fractures which were produced at different times by very slight force. The first fracture, which occurred about two inches below the lesser trochanter, is firmly united, but in such a manner that the two portions form an angle of about 75°. The second fracture happened a few days before death; it passes transversely, but very irregularly, through the shaft of the bone. The smaller portion, consisting of a section of the right femur, exhibits the union of a fracture precisely like that which first occurred in the left thigh. The rest of this bone is preserved in the Series I, No. 6. The texture of the bones is soft, light, spongy, and infiltrated with fatty matter. C. 116

(In Case H.)

760. Section of a Femur from a young woman, in which a fracture was produced by the action of the surrounding muscles. The wall of the bone is much thinner than natural; but its substance apparently contained the usual proportion of earthy matter. The fracture is imperfectly united. I. 128

Presented by W. J. Wilson, Esq., Manchester.

See also Series I, No. 8, *and No.* 785.
For Specimens of Spontaneous Fracture of Necrosed Bones, see Series I, Nos. 157 *and* 167.

GUNSHOT AND OTHER SIMILAR INJURIES.

761. A Skull-Cap with the Dura Mater, showing the apertures of ingress and egress of a bullet which passed through it transversely. The aperture of ingress, just above the right angular process of the frontal bone, is small and round; that of egress, below the left parietal eminence, is as large as a shilling and the edge is broken away externally.

The history is unknown.

762. A Skull. Through the squamous portion of the right temporal bone, at its junction with the parietal, a bullet has passed. There is a larger irregular aperture on the left side of the occipital bone probably made by the bullet in its exit. C. 132

(In Case H.)

763. Portion of a Sternum fractured upon its internal surface by a bullet, which has become firmly imbedded in the surface of the bone, and in new bone deposited around it so as to form a shallow pit. III. 37

764. A right Innominate Bone; on the outer side of the ilium is a large circular aperture, and around it are many indentations, in some of which the shots producing them are seen impacted in the osseous tissue. C. 119

(In Case H.)

From a boy 17 years of age, who died sixteen days after having been accidentally shot by a companion. He progressed favourably for a time, but, on the twelfth day, he was seized with rigors, and suffered from a great increase of pain about the region of the wound. He sank rapidly.

A probe introduced along the track of the shot detected bone denuded of periosteum; it being suspected that pus had formed on the pelvic aspect of the ilium, the surface of that bone was exposed, and the opening, conspicuous in the preparation, was made with the trephine. No benefit resulted to the patient, and the hæmorrhage which ensued from the iliac fossa was with great difficulty restrained. After death the hip-joint was found full of pus, its synovial membrane highly congested, and its cartilage natural. There was extensive suppuration throughout the right pyriformis muscle, and puriform fluid in the internal iliac vein.

765. Part of a Femur from the body of a Russian whose limb was carried off by a round shot at the battle of Cherneya. C. 123

(In Case H.)

766. Portion of a Femur, the internal condyle of which was extensively comminuted by a bullet, which penetrated the knee-joint. Several fissures extend through the bone in the neighbourhood of the injury, one of which passes along the shaft as high as the sawn extremity. The bullet was found after death in the position where it is now fixed.

From a Servian, who was wounded at Alexinatz, September, 1876. The bullet could not be discovered during life; he refused to submit to amputation and died of exhaustion.
Presented by Dr. Schofield.

767. A Gun-shot injury to the Tibia: there is an oblique Comminuted Fracture through the upper third of the bone: a fissure is also seen to pass round the bone at the level of the upper limit of the fracture.

From a Servian, who was wounded in the Turco-Servian War, 1876.
Presented by Dr. Schofield.

768. The Femur and Tibia of a Cat. A fracture of the femur near the middle of the shaft, has been united by bone formed around and between the ends of the overlapping fragments. A small leaden bullet is fixed in the tibia near its head; a fracture in this situation is nearly united, and without displacement, by bone deposited around it. III. 115

Presented by Thomas Wormald, Esq.

PROCESS OF REPAIR OF FRACTURES.

SPECIMENS OBTAINED BY EXPERIMENTS PERFORMED BY MR. STANLEY,* ILLUSTRATING THE REPAIR OF FRACTURES, &c., IN ANIMALS.

769. Section of the Tibia of a Dog, exhibiting the process of union on the tenth day after a transverse fracture through the middle of the shaft. A ring-shaped mass of cartilaginous substance is deposited between the periosteum and bone, around and for some way above and below the line of the fracture. In the centre of this cartilage there are some minute deposits of earthy matter. The line of fracture is distinct: in the medullary cavity it is interrupted by a deposit of cartilaginous substance; but in the walls of the bone it is still open. III. 69

770. Section of the Tibia of a Dog; the other half of the preceding specimen. The periosteum is turned downwards and completely separated from the cartilaginous substance deposited upon the bone around, above, and below the fracture. III. 70

771. Section of the Tibia of a Dog, which was fractured a fortnight before death. New osseous substance is thinly deposited in a ring beneath the periosteum, around, and for some way above and below the line of fracture; but in the line of the fracture, as well as in that part of the new bone which immediately surrounds the line, the osseous union is not completed; a line of cartilage only is here seen on the surface of the section, just as in the two preceding specimens, and No. 772. III. 96

772. Section of the Tibia of a Dog, exhibiting the process of union on the eighteenth day after a similar fracture. The cartilaginous substance deposited between the periosteum and bone around, above, and below the fracture, is ossified, except in that part which corresponds with the line of fracture. This line is still open (as in the preceding specimen) in the wall of the bone, but is closed by cartilaginous substance in the medullary tube. III. 71

773. Radius and Ulna of a Dog. A portion of the middle of the shaft of the radius, in its entire thickness and with its periosteum, was removed ten weeks before the dog was killed. In the upper part of the bottle is the piece of bone which was thus removed. The vacant space was found filled by soft connective tissue. The shaft of the ulna opposite to, and corresponding with the vacancy in the radius, is considerably enlarged by the deposit of osseous substance beneath the periosteum. III. 86

774. Radius and Ulna of a Dog, on which an experiment was performed similar to that described in No. 773, with this exception, that the bone alone was removed, the periosteum being divided and separated by a scalpel from the bone, to admit of the removal of the latter from within it. The vacant space in the radius is here completely filled by newly formed osseous substance. III. 87

775. Radius and Ulna of a Dog, on which an experiment was performed similar to that described in No. 774, and in which the periosteum was not removed with the bone. The vacancy in the radius is here almost completely filled up by newly formed osseous substance. The ulna has become bent in the situation of the experiment upon the radius, apparently in adaptation to an abundant deposit of osseous substance beneath the periosteum of the radius. III. 88

OTHER SPECIMENS OF REPAIR OF FRACTURES IN ANIMALS.

776. The Humerus of a Horse, fractured in an oblique plane from one end of the

* See his work on "Diseases and Injuries of the Bones," Plate XXIV.

shaft to the other; but, apparently, without implicating either of the articulations. The fracture is firmly united by bone placed between the apposed fractured surfaces. c. 118

(In Case H.)

777. A Similar Specimen.

(In Case H.)

778. The Femur of a Fowl, fractured obliquely through the middle of its shaft. The ends of the two overlapping portions, are firmly united by bone formed between them and upon their sides. III. 114

REPAIR OF FRACTURES IN MAN.

FORMATION OF ENSHEATHING OR PROVISIONAL CALLUS.

779. Parts of two Ribs which were fractured a fortnight before death. The extremities of the fractured portions are in close contact, and are surrounded by a broad ring of callus, partially ossified. A section of one of the ribs shows the periosteum continued over the exterior of the callus. III. 106

780. The outer portion of a Clavicle divided longitudinally, from a boy aged nine years. It was fractured about three weeks before death. The extremities of the fractured portions are surrounded by a ring of provisional callus, but no union has taken place at the line of fracture between the fragments. III. 133

781. Section of a Humerus, in which a fracture of the middle of the shaft occurred five weeks before death. The ends of the bone are not united; but they are held firmly together by a ring of rough osseous substance deposited on the whole circumference of their outer surfaces, and extending some way above and below the fracture. III. 65

782. The other half of the Humerus, No. 781, macerated. III. 66

783. Sections of a Child's Femur, which was fractured thirty days before death. The fracture extends obliquely from behind forwards, and from above downwards, through about the middle of the shaft. The sharp extremity of the lower fragment projects slightly, but elsewhere the bones are in close apposition. Both fragments, to a distance of between one and two inches from the line of fracture, are ensheathed in a layer of new bone (provisional callus). At the line of fracture, the new bone, filling the angles between the fragments, is a third of an inch in thickness; from this point, in each direction, it gradually decreases in thickness till it is lost sight of, and the bone bordering on it only appears more than naturally vascular. The new bone is very finely cancellous; it is inseparably connected with the surface of the old bone, and on its outer surface, which is rough and porous, is closely invested by the periosteum, beneath which it was formed. The periosteum itself is thickened. The fragments thus ensheathed and held together almost immovably by the new bone, are not directly united; the line of fracture is still evident between them; but some new bone has been formed in the medullary cavity of each. III. 124

The child was two years and ten months old. The fracture was treated in the usual manner. Splints were kept on for three weeks, and, after these were removed, the limb was maintained at rest. The child, who had appeared healthy and strong, was attacked with convulsions, and died on the thirtieth day after the fracture. Abscesses were found in the brain.

OTHER SPECIMENS ILLUSTRATING THE PROCESS OF REPAIR OF FRACTURES IN MAN.

784. A united fracture of a Femur taken from a child aged 4 years. Death took

place from meningitis nine weeks after the date at which the fracture occurred. There is a moderate amount of provisional callus around the fracture, over which the periosteum may be seen to be continuous: callus has also formed between the fragments, but the medullary canal is not yet re-established. There is no deformity: the limb was shortened half an inch. The usual treatment by a long splint and subsequently gum and chalk bandage was adopted.

785. Sections of a Clavicle, exhibiting a fracture which occurred while the patient was holding a weight above his head. Considerable progress has been made in the repair of the fracture, the ends of the bone being held firmly together by an osseous ring extending around them. The periosteum is in part separated, to show that this osseous ring is deposited wholly beneath the membrane. Callus is also in process of formation between the fractured surfaces. The general texture of the clavicle does not appear diseased. III. 92

From a man aged 60. He stated that he had suffered rheumatic pains in the clavicle for some time before the fracture occurred: but he was not aware of the existence of the fracture; and when, about two months afterwards, he came under the care of a surgeon, the ring of bone around the clavicle received so distinct a pulsation from the subclavian artery, that the swelling was suspected to be an aneurism. The patient died of erysipelas of the head three months after the fracture of the clavicle.

786. Sections of the upper part of a Femur, in which a fracture partially united extends obliquely through the base of its neck, in a line marked by bristles. The synovial and periosteal coverings of the neck of the bone are entire, and there is, in consequence, no separation of the fractured surfaces. III. 32

The patient was a man 60 years old. He was knocked down, and complained of pain in the hip; but there was neither shortening nor eversion of the limb, and its several motions could be exercised with perfect freedom and power. He died with intestinal disease five weeks after the accident. The case is described by Mr. Stanley, in the *Medico-Chirurgical Transactions*, vol. xiii, p. 511. London, 1825.

787. Portion of a Femur, exhibiting an intra-capsular fracture of its neck. The plane of the fracture is vertical, extending from the upper margin of the head straight downwards through the neck to the outer part of its lower border. Bristles are introduced between the fractured surfaces, which are in close apposition, and it will be observed that the attachment of the capsule to the bones is entirely beyond the line of the fracture. That portion of the neck of the bone which remained connected with the trochanters is partly absorbed, and the union of the fractured surfaces, although not complete, is by osseous matter inlaid between them. III. 50

The person from whom this specimen was taken was 18 years of age. In a fall from a cart he injured his right hip; such symptoms ensued as gave rise to the belief that he had dislocated the head of the femur into the foramen ovale. Efforts at reduction were accordingly made. About three months after the injury he died with small pox. The case is described by Mr. Stanley in the *Medico-Chirurgical Transactions*, vol. xviii, p. 256. London, 1833.

788. The Upper part of a Skull, with a depression of a small oval portion of the right side of the frontal bone, from a fracture received a long time before death. Both the surfaces and the margin of the depressed part are smoothly and completely united; but on the inner surface are traces of a starred fracture of the internal table. C. 111

(In Case H.)

789. A Skull, in which there has been a comminuted fracture through the squamous portion of the right temporal bone, from which, also, a fracture extends through the meatus auditorius externus and base of the petrous portion of the temporal bone, nearly as far as the margin of the foramen magnum. The several portions of the squamous bone which were insulated by the fracture, are firmly re-united, but with narrow intervals remaining in places between them: the fracture through the base is similarly united. C. 94

(In Case H.)

790. Section of a Clavicle, in which an oblique fracture through the middle of the shaft, has been exactly united. C. 82
(In Case H.)

791. Section of a Humerus, in which a fracture of the shaft at the attachment of the deltoid muscle has been exactly united, so that both the walls and the cancellous tissue are uninterruptedly continuous; and, except by a slight deviation of its axis, and a small external deposit of new bone, the situation of the fracture could hardly be discerned. III. 104

792. An Ulna, in which a fracture through the middle of its shaft has been exactly united, but with a small sharp process of bone growing from its outer side. C. 81
(In Case H.)

793. Sections of the upper part of a Femur, from a man aged 82, who was believed to have received a fracture of the neck of this bone two years before death.

Presented by Walter Jones, Esq.

"The history of the case is clearly that of fracture of the neck of the Femur; the appearances of the bone show that there has been a fracture which has re-united by an osseous medium; and the direction of the fracture is such as, in my opinion, can permit of no doubt that it was confined to the portion of the neck of the bone covered by synovial membrane; consequently that it was wholly within the capsule. The fracture extends through the base of the head of the bone in the line of its junction with the neck. As in other cases of the same kind, great part of the neck of the bone has disappeared, and in consequence the head is proportionately nearer to the trochanter major and shaft of the bone; its re-union has in fact taken place, in part to the remaining portion of the neck, and in part to the shaft. This union is certainly osseous. In addition to the first maceration of the bone with its surrounding soft parts, it was subsequently immersed for several days in a strong solution of carbonate of potash; and one-half of the bone has been boiled in water for three hours without the slightest yielding perceptible in the line of the fracture." III. 107

Description of the specimen by Mr. Stanley, in the *Medico-Chirurgical Transactions*, vol. xxiv, p. 13. London, 1841.

794. Sections of the upper part of a Femur, in which a fracture of the neck external to the capsule has been exactly united by bone.

Presented by Mr. Hester.

795. A Patella which has been fractured transversely, near the attachment of the ligamentum patellæ. A part of the line of fracture still remains open; but in another, and smaller part, the two portions are smoothly united by firm and healthy bone. III. 105

796. A Fracture of a right Tibia at the junction of the upper with the lower two-thirds, showing the process of repair, with displacement of the bones. The upper fragment is displaced inwards and slightly forwards, and the angle between the fragments on the posterior surface is filled up by callus, but there is as yet no direct union between the fractured surfaces. The medullary canal of the lower fragment is filled with granulation tissue, which was undergoing ossification.

From a man, aged 62 years, who died of bronchitis twenty days after sustaining a fracture of the leg by a fall of twenty feet. The fracture was treated by splints and a weight.—See *Rahere Ward Book*, vol. vii, p. 7.

797. Sections of a Femur, in which there has been an oblique fracture of the shaft, extending from an inch below the trochanter minor. The fractured ends overlap considerably, the lower fragment being drawn upwards in front of the upper.

A moderately firm union has taken place between the surfaces of bone which are in contact. The bones are very light. C. 48

From a woman, 67 years old, who died five weeks after the occurrence of the injury. (In Case H.)

798. Section of a fractured Rib, which has united with displacement and overlapping of its ends. The firm union of the two portions of the rib has been effected by the abundant deposit of osseous substance in the texture of the periosteum and contiguous cellular tissue around, for some way above, and below the fracture. A spiculum of bone projects from one side of the rib; this was probably a fragment separated by the fracture, and re-united to the outer surface of the rib. III. 81

799. A Clavicle of a man seven weeks after fracture, showing union, with considerable displacement, by the formation of callus between and around the fractured surfaces. He died of concussion of the brain. III. 134

799a. Sections of the Tibia of a middle-aged woman, which was fractured through the junction of its middle and lower thirds, sixteen weeks before death. The ends of the two portions overlap each other nearly an inch; and a firm union of them is effected by new bone, formed between those surfaces, which, in their overlapping, were opposed to, and partly in contact with, each other. No new bone or callus is formed at any other part. The periosteum and the tissues adjacent to the bones appeared healthy, except in having small effusions of blood in them. III. 113

800. Part of a Humerus fractured transversely. The fractured ends overlie each other, and are united by an irregular, dense, bony deposit, which forms an imperfect investment. The compact portion of the bone is thickened, and of an ivory-like character. C. 122

(In Case H.)

801. An oblique fracture of the Femur at the junction of the upper two-thirds with the lower third. The bone is much shortened by the riding of the upper fragment over the lower. The fragments are firmly united by large masses of callus which occupy the interspace between, and partially surround them. The rough edges of the bone are thinned, and were apparently undergoing absorption. III. 128

802. Section of a Femur, in which there has been a fracture through the middle of its shaft. The section was made after softening the bone in dilute hydrochloric acid. The fracture is firmly united, with the upper portion of the bone projecting in front, and on the inner side of the lower. The uniting medium consists of bone placed between the adjacent surfaces of the displaced portions of the femur; and in this new bone there are formed cancellous tissue of healthy aspect, and an outer thick wall of compact tissue. This wall of the uniting medium of new bone is connected with the surfaces of the two portions of the femur, and with the layers of compact new bone by which their medullary tubes exposed by the fracture, and not placed in apposition, are covered in. The corresponding parts of the walls of the overlapping ends of the fragments are thinned, as if in the progress of absorption by which, ultimately, the cancellous tissue of the uniting medium would have become continuous with that of both portions of the broken bone. III. 98

803. The other Section of the same Femur. The ends of the bone have overlapped; the upper portion uniting to the inside of the lower. C. 63

(In Case H.)

804. Sections of a Femur fractured near the middle of its shaft. The ends of the bone overlap, the upper portion being united to the front of the lower. Strong pointed osseous growths project from the surface of the bone by which

the fracture is repaired. The sections show that the bone by which the fracture is united is formed entirely between the adjacent surfaces of the overlapping portions. c. 60

(In Case H.)

REPAIR OF COMPOUND FRACTURES.

805. Section of a Tibia from a case of compound fracture, in which amputation was performed eleven weeks after the occurrence of the injury. The two portions of bone are held firmly together by osseous substance deposited around the torn edges of the periosteum, and in the contiguous cellular tissue. The union of the fractured surfaces of the walls of the bone and of its medullary tissue is not yet complete; the uniting medium here consists only of granulation tissue. III. 79

806. Section of a fractured Fibula from the same limb as the preceding. A small piece of bone, which was detached, has been re-united. The upper and lower portions of the fibula have become so displaced that the fractured end of the lower has rested against the outer surface of the upper portion. In this situation they have become firmly united by bone. III. 80

807. Portions of a Tibia, from a case of compound fracture through the middle of its shaft. The portions of the bone, partly overlapping, partly driven into each other, are united by new bone placed between their adjacent surfaces, but not surrounding them. III. 90

REPAIR AFTER TREPHINING.

808. Portions of the Crania of two young Dogs, upon whom the operation of trephining was performed two months before they were killed. The piece of card indicates the size of trephine which was employed. In each instance the opening is narrowed and altered in shape. The deposit of osseous matter has taken place wholly from the edges of the opening in the bone, and in no degree from the pericranium or dura mater. III. 39

The experiment was performed by Mr. Stanley.

809. Portion of a Skull, in which a trephine hole, made thirty-four years before death, has been nearly filled up by new bone. The greater part of the new bone has been produced from the border of the aperture in the inner table. The aperture still remaining is of an irregularly oval form, about five lines long, and a line and a half wide. Its margins are sharp, and its borders shelve obliquely inwards and downwards from the surrounding healthy bone. It was filled up by a tough fibrous membrane. III. 109

The patient, a Sergeant of Marines, was struck on the head with a tomahawk at the taking of the Danish fleet in 1807, and was trephined in Haslar Hospital shortly afterwards by Sir Stephen Hammick.

Presented by George Mantell, Esq.

FRACTURES UNITED WITH DEFORMITY.

With Vertical Displacement either in the Antero-Posterior or Lateral Positions.

810. A Femur, which has been fractured in the middle of its shaft. The two portions overlap to the extent of four or five inches, the upper portion lying directly in front of the lower. They are firmly united by bone formed between them and at their sides, and the greater part of the surface of this bone is continuous with the surfaces of the overlapping fragments. A groove along the front of the lower extremity of the upper portion of the femur marks the healing of a fissure. c. 5

(In Case H.)

811. A Femur which has been fractured near the junction of its upper and middle

thirds. The ends overlap the upper portion uniting to the front of the lower, with a large accumulation of bone at their sides, from which also many pointed processes project. There is a small flat growth of bone on the lower and posterior part of the shaft of the femur. c. 59

(In Case H.)

812. Sections of a Femur, in which a fracture extends transversely through the shaft immediately below the neck. The lower portion has been drawn upwards and backwards, so that its upper end is on a level with the trochanter major; and in this position it is firmly united by bone to the back of the trochanter and the base of the neck. c. 85

The fracture occurred six years before death. See No. 97, which was taken from the same case.
(In Case H.)

813. A Femur, showing a fracture in the lower half of the shaft united with much displacement and shortening. The displacement is antero-posterior, the upper portion being in front; the fragments are separated and firmly united by bone.

Taken from the dissecting-room.
(In Case H.)

814. Sections of a Femur, which has been fractured in the middle of its shaft. The two portions overlap considerably, the upper portion lying on the inner side of the lower. The fracture is firmly united by bone placed between and at the sides of the fragments; and the sections show that this bone is composed of cancellous tissue and compact walls, which have almost completely coalesced with the cancellous tissue and walls of the portions of the femur which it unites. c. 7

(In Case H.)

815. Section of a Femur, which has been broken about the middle of its shaft. The two portions overlap considerably, and are united in this position. The bone forming the medium of their union has a cancellous texture, with compact walls. The medullary cavity is closed at both the fractured ends of the bone. c. 19

(In Case H.)

816. A similar Specimen. c. 20

(In Case H.)
Vide also Nos. 797 and 801.

817. Parts of a Tibia and Fibula, in which a compound fracture through the middle of their shafts occurred two years before the amputation of the limb. The several portions of bone, displaced and overlapping, are firmly consolidated by osseous substance deposited between their contiguous and lateral surfaces. The small separate portion of the tibia was found loose in the cavity of the bone by the side of which it is now placed. Besides the fractures in the central parts of the tibia and fibula, there are fractures running transversely and obliquely through the outer malleolus of the fibula, which have been united by bone. c. 92

(In Case H.)

Rotation with or without vertical displacement.

818. A Radius, which has been fractured near the middle of its shaft. The fracture is united with a little overlapping of the ends of the bone, and so much rotation outwards of the upper fragment by the biceps that the tubercle is directed upwards. c. 30

(In Case H.)

819. A Femur which has sustained a comminuted fracture just below the trochan-

ters. The fragments are united, with considerable displacement, by several short bridges of bone extending between them. The shaft of the femur is completely everted, the condyles being directed straight outwards; the upper fractured end of the shaft lies behind the great trochanter. c. 114

(In Case H.)

Presented by J. F. Crookes, Esq.

820. A Femur, which has been fractured at the junction of its upper and middle thirds. The fractured ends overlap considerably, the upper portion lying across the front of the lower, and the lower being much rotated outwards. In this position they are firmly united by bone formed between them and at their sides, and their medullary cavity, exposed by the fracture, is covered in by smooth thin layers of compact bone. c. 4

(In Case H.)

Vide No. 974.

Angular Displacement.

821. A Femur, which has been fractured transversely, immediately above the trochanter minor. The upper portion has been drawn forwards and upwards, and is firmly united to the top of the shaft, forming nearly a right angle with it. c. 6

(In Case H.)

822. Portion of a Femur, which has been fractured about three inches below the trochanter minor. The fracture was a comminuted one, and the portions of bone have been displaced, so that a considerable angle, projecting forwards, is formed at their union. c. 11

(In Case H.)

823. The bones of a Knee-Joint. There has been a transverse fracture through the shaft of the femur, immediately above the condyles. The upper end of the bone, protruded downwards into the popliteal space, has, in this position, become firmly and extensively united to the condyles. There is a complete osseous anchylosis of the patella to the femur, and of the condyles of the femur to the head of the tibia. c. 58

(In Case H.)

824. A Tibia and Fibula fixed at right angles after a transverse fracture at their lower third. The case had not been subjected to surgical treatment. c. 127

(In Case H.)

Presented by Mr. Stevens.

825. A Tibia and Fibula, fractured through the middle of their shafts. The fractures are firmly united, but with displacement, so that in each bone there is a considerable angle directed inwards. c. 97

(In Case H.)

Union with Separation of the Fragments.

826. Portion of a Femur, which has been fractured through the trochanter major and upper part of the shaft. The fracture extends for five inches downwards through the shaft. The two portions of the shaft, though not in contact, have been united by processes of bone extending between the adjacent margins of their walls; and the portions of the trochanter, remaining more nearly in contact, are closely united by bone. c. 10

(In Case H.)

827. Portion of a Humerus, in which there has been fracture of the upper part of the shaft extending to its neck. The portions are widely separated, and are firmly, but imperfectly, united by bridges of bone. c. 26

(In Case H.)

FRACTURES UNITED WITH EXCESSIVE FORMATION OF CALLUS, AND THICKENING OF THE BONES.

828. Section of a Clavicle, the scapular end of which is so enlarged after a fracture that it has the appearance of a tumour. A. 125

(In Case H.)

829. A Radius and Ulna, which have been fractured near their upper ends. The fractures are both firmly united, and a large quantity of new bone has been formed around them. The surfaces of the new bone on the radius and of that on the ulna, meeting in the interosseous space, have been roughly adapted to each other, but have not coalesced. C. 29

(In Case H.)

830. Sections of a Femur, in which there has been a fracture extending through the base of its neck, and through its shaft between the trochanters. There is firm union of the fractured surfaces, with shortening of the neck and an apparent descent of it below its natural situation. The union has taken place with a great accumulation of bone about the lines of fracture. C. 51

(In Case H.)

831. Section of a Femur at the part where it had been the seat of a comminuted fracture. Around the bone the periosteum is thickened, as seen in portions detached from the subjacent tissue. In the centre of the preparation is a mass of bone, separated from the remainder of the shaft at the time of the accident. Its compact walls are greatly thickened; in more than half its extent they entirely replace the cancellous structure and the medullary canal. Of the latter only a small isolated portion still remains. At one extremity there is firm, bony union between the shaft and the portion of bone above described. At the other, where the great compactness and induration exist, a line of soft tissue, in which are scanty spicula of bone, intervenes between it and the shaft. Nevertheless, by means of bone thrown out from the periosteum, the two portions were held together. Death occurred from other causes six weeks after the injury. III. 127

From the collection of the late Mr. Lonsdale.

832. Sections of a Tibia, showing the reparative results of inflammation after a compound fracture. The union of the fractured ends of the bone is effected by an irregular and very abundant deposit of hard and heavy new bone; and for a considerable space above and below the place of union, the medullary tissue is consolidated. The surrounding tissues, thickened and indurated, were firmly adherent to the surface of the bone above and below the place of union. A portion of the thickened tissue has been detached and turned downwards. I. 89

833. A portion of the Fibula from the same limb as the preceding. Its fractured ends overlap each other, and are united by bone formed between them. I. 90

834. Portions of a Tibia and Fibula with the Astragalus. Both the tibia and the fibula were fractured about three inches above the malleoli, and the fracture of the tibia extends downwards into the ankle-joint. The fractures are all firmly united, with little displacement, but with much thickening and induration of the bones, and with osseous union of the tibia and fibula, and of both of them to the astragalus. C. 17

(In Case H.)

835. A Tibia, Fibula, and Astragalus. The tibia has been fractured at the junction of the upper and middle thirds of its shaft. Its two portions, displaced laterally, have been firmly united, and the lower portion is enlarged by abun-

dant external deposits of new bone, in which are two apertures, such as probably led to portions of dead bone. The fibula, in adaptation to the altered form of the tibia, to which also it is united by two bridges of new bone, is bent and flattened as in rickets. The lower end of the tibia is united by bone to the astragalus and to the external malleolus. c. 2

(In Case H.)

FAILURE OF THE PROCESS OF OSSEOUS UNION.

UNION BY FIBROUS TISSUE.

836. Portion of a Scapula exhibiting a fracture through the Acromion, which has been united by fibrous tissue. III. 36

837. A Radius and Ulna, which were fractured a considerable time before death. The overlapping ends of the bones are united by thick tough layers of fibrous tissue. They have been in part separated, to show the mode of their union. III. 41

838. Sections of the upper part of a Femur, in which a vertical intra-capsular fracture occurred. The portion of the neck, which was connected with the shaft, is nearly absorbed; the portion connected with the head remains, and its lower margin rests, as on a ledge, on the trochanter minor and the cancellous tissue within it. The fractured surfaces are united by a thick layer of tough fibrous tissue, permitting a slight degree of motion between them. III. 119

839. Sections of the upper part of a Femur fractured almost vertically through the neck, at the base of the head and entirely within the capsule. The neck and the upper part of the shaft have been drawn a little upwards, and the lower part of the fractured surface and margin of the neck, has been driven tightly into the cancellous tissue of the head. In this position, without any lateral displacement, and without any absorption of the neck of the femur, the fractured surfaces have been united by a thin layer of tough fibrous tissue, which permitted them to be slightly moved on one another. The fibrous covering of the neck appears to have been torn across and re-united in front, but to have remained entire behind. All the textures adjacent to the fracture are healthy, but the walls of the bone are thin, and its cancellous tissue is atrophied and full of soft fat. III. 110

The patient was a very old woman. The fracture occurred about three months before death.

840. Portion of a Femur, in which an intra-capsular fracture of the neck occurred many years before death. The neck of the bone is absorbed: both the fractured surfaces are thinly covered by fibrous tissue, and that of the head has become firmly united to the lower part of the thickened capsule, near its attachment to the head, by a broad band of fibrous tissue. III. 49

841. Section of a Patella, which has been fractured transversely. There is no bony union; and no production of new bone. The surfaces of the fracture have undergone but little change. In consequence of the insertion of the extensor tendon, and ligamentum patellæ chiefly into the free or external surface of the bone, the fragments have been drawn asunder to a greater extent externally than at their articular surface, so that a wedge-shaped interval exists which in front measures one inch and a-half, towards the joint surface only six-tenths of an inch. Ligamentous material has been produced from the whole of both fractured surfaces: but in front this has undergone stretching, while towards the joint surface it constitutes a strong, thick, and wide connecting band between the fragments.

842. Section of a Patella which has been fractured into three pieces. The portions are united by a thick ligamentous substance, and are all enlarged; the upper fragment alone is as large, and has the same form as an ordinary adult patella: the enlargement is probably due to ossification of the uniting medium. III. 29

843. Two Patellæ from the same person. Both bones have been fractured transversely. The fractured portions of each, having been separated to a distance of five inches from each other, are connected only by a thin fibrous membrane. The fragments are enlarged, although unequally. III. 28

844. Section of a Tibia, in which are two fractures which occurred twelve weeks before death; one extends across its shaft, the other through the cancellous texture of its inferior extremity. The fractured surfaces are united only by fibrous tissue. III. 67

Vide Nos. 904, 905, 971.

FRACTURES WHICH HAVE REMAINED LONG UNUNITED.

845. A Shoulder-Joint, exhibiting an ununited fracture of the surgical neck of the humerus, with obliteration of the axillary artery from the pressure of the lower portion of the bone against it. The fracture extends transversely through the humerus, immediately below its head and tuberosities; and it communicates with the cavity of the shoulder-joint. A small detached piece of the bone is connected with the synovial membrane. The synovial membrane is thickened, and its internal surface rough. A bristle is passed beneath the tendon of the biceps. The axillary artery is obliterated, to the extent of half an inch, in the situation at which the end of the lower portion of the humerus pressed against it. Immediately above the obliterated part, the subscapular artery arises, of its usual size. It is still pervious. Close to the subscapular is the posterior circumflex artery, obliterated in the first half inch from its origin, and then pervious by means of the collateral circulation. About two inches above the origin of the subscapular, a large branch arises from the axillary artery; this branch, extending down the inside of the arm, was continued into one of the arteries of the fore-arm, and formed a principal channel for transmitting blood from the upper to the lower part of the limb. III. 74

From a man aged 75. The injury occurred ten years before death.

846. A Humerus, fractured transversely through the junction of its middle and lower thirds, six months before death. No union has taken place between the fractured portions: their ends overlap nearly an inch, and are enclosed in a cavity smoothly walled in by the indurated tissues around them. The end of the upper fragment is rounded and made conical by the absorption of its borders, and is covered with granulations, which in the recent state were soft, vascular, and very florid; the end of the lower fragment is in part adherent to the adjacent tissues, and in part, similarly covered with granulations. III. 122

The patient was 60 years old. No pus existed in the cavity enclosing the ends of the bone, nor did any opening lead into it from without. The parts are represented in the Drawing, No. 52.

847. Portion of a Femur, exhibiting an intra-capsular fracture of its neck, which occurred about five months before death. The periosteal and synovial coverings are torn upon only the posterior side of the neck of the bone; upon its anterior side they are entire. The portion of the neck which remains connected with the head of the femur is not absorbed, but the margins are rounded. III. 40

The patient, a middle-aged man, fell in the street, and his hip struck against the curb-stone. Immediately afterwards the limb was inverted, and an inch shorter than the other; but no crepitus was felt. In the suspicion that dislocation existed, repeated attempts at reduction were made. The case is recorded by Mr. Stanley, in the *Medico-Chirurgical Transactions*, vol. xiii, p. 508. London, 1825.

848. A Hip-Joint, exhibiting an intra-capsular fracture of the neck of the Femur, which occurred many years before death. The neck of the bone is absorbed. Bristles are passed beneath three thick fibrous bands, which extend from the fractured surface of the head of the bone to the capsule. The capsule is generally thickened, and the fractured surfaces are covered by thin smooth layers of fibrous tissue. III. 19

849. Portion of a Femur, in which fracture of the neck occurred many years before death. There has been complete absorption of the neck of the bone. The surfaces of the head and of the space between the trochanters which have been in contact, and which probably moved freely on each other, are very hard, polished, and ivory-like. III. 17

850. Portion of a Femur with the Acetabulum, exhibiting a fracture of the neck of the femur, which occurred fifteen years before death. The neck of the bone is absorbed. The opposite surfaces of the head and shaft, which have been in apposition, are covered by a layer of hard osseous substance. There is a considerable deposit of new bone at the bottom of the acetabulum, and upon the head of the femur. C. 76

The signs of fracture of the neck of the femur were not present till six weeks after the injury, and two weeks after the patient had begun to walk on crutches.
(In Case H.)

Presented by Thomas Wormald, Esq.

851. Portions of a Femur, of which the neck was fractured, near the margin of the head, many years before death. The remains of the neck have been nearly absorbed. The fractured surface of the head is adapted to the surface of the short portion of the neck which remains between the trochanters, and to a growth of bone proceeding from it downwards. Both the surfaces thus adapted are very hard, polished, ivory-like, and penetrated by numerous foramina. C. 105
(In Case H.)

852. Portion of a Femur, exhibiting a fracture of its neck, of which no union has taken place. The neck of the bone is almost completely absorbed and the surfaces by which the fractured portions were in contact are rough and hard. Deposits of osseous substance have taken place around the base of the head of the femur. C. 50

From an old woman; the fracture occurred nineteen years before death.
(In Case H.)

Presented by J. H. B. Williams, Esq.

853. Portion of a Femur, exhibiting fracture of its neck, of which there is no union. The surfaces of the head, and of the space between the trochanters, which were in contact, are nearly smooth and very hard. Irregular osseous deposits have taken place around the fractured surface of the neck, and upon the head of the bone. C. 52
(In Case H.)

854. The right Femur of a child 11 years old, which was fractured in the middle third of its shaft, four years before death, and in which no osseous union of the fragments took place. The whole of the bone is exceedingly atrophied. The lower end of the upper portion is enlarged, light, and porous, as if by expansion or rarefaction of its tissue. The upper end of the lower portion is

irregularly excavated as if by ulceration; the walls of the remainder of this portion are very thin, light, and dry, and in many places perforated by absorption. I. 265

The child died with disease of the mesenteric glands. The left tibia and fibula were two inches longer than the right.

Presented by William Taylor, Esq.

855. A Knee-Joint, from a person who fractured the patella many years before death, and recovered complete use of the limb, although no union of the fragments took place. In the extended position of the limb, the fragments of the patella are about four inches apart; their broken surfaces are turned obliquely forwards, and are smooth, and thinly covered with fibrous tissue; their posterior borders are tightly connected with the synovial and fibrous capsules of the joint, which hold them in their places; there is no direct or new-formed bond of union between them. III. 123

856. The Femur of a Sheep fractured, long before death, through the upper part of its shaft. The fractured surfaces, though adapted to one another, have not united; but new bone is abundantly formed upon and around them. III. 117

UNUNITED FRACTURES ON WHICH AN OPERATION FOR REPAIR HAS BEEN PERFORMED.

857. Ununited fracture of the Femur treated by resection of the broken ends, and the insertion of steel pegs. The holes for the pegs are increased in size, and are surrounded by new periosteal bone. The fragments could not be kept sufficiently at rest, and no union took place. The fracture was simple, but very oblique. It was treated in the Hospital throughout; at the end of nine months resection was performed; two months later the limb was amputated. The knee-joint, which had been kept in the extended position by a weight for a considerable time, is anchylosed. The cartilages are ulcerated in several places.—See *Lawrence Ward Book*, vol. iii, p. 33, and *Path. Soc. Trans.*, vol. xxv, p. 212, 1874.

858. The Shaft of a right Tibia and Fibula. At the junction of the lower with the upper two-thirds, the bones are connected only by ligamentous tissue, but are in good position. Both bones are ill-developed. The tibia is flattened from side to side; the whole bone is bent forwards and the anterior margin projects in a prominent curved spine. The tissue of the shaft appears thickened. The lower third of the tibia tapers gradually to its junction with the upper two-thirds, where it is extremely small. The fibula is very slender and flattened. Two pieces of glass rod are inserted through the junction of the two portions of the tibia, to mark the holes into which wire pins were inserted in the operation of osteotomy. Two of the apertures are much enlarged from absorption of the bone.

The bones were removed by amputation from a young man, aged 21 years, who was admitted to the Hospital with a congenital deformity of the leg. The limb was bent forwards and outwards, and the foot turned inwards, giving the appearance of talipes varus. An ununited congenital fracture was diagnosed, which was now yielding. Osteotomy was performed, a wedge-shaped piece of bone being removed, and the fragments were wired together. A month after the operation firm union had apparently taken place, but the uniting material subsequently yielded, and amputation was finally performed below the knee.—See *Abernethy Ward Book*, vol. vi.

859. Part of a right Femur just above its middle, showing the extremities of an ununited fracture. There are deposits of new bone scattered over either portion, the medulla being closed by a compact layer of dense osseous tissue. The apertures indicate the spots where ivory pegs were introduced. The depressions are lined with new bone from which spicula irregularly project. C. 121

In consequence of the failure of all remedial measures, the limb was amputated immediately below the hip-joint. The patient eventually recovered.
(In Case H.)

FALSE JOINTS (Pseud-arthroses).

860. The Scapular end of a Clavicle, with a small portion of bone united to it by a distinct joint. III. 35

It is probable that this had been separated by fracture.

861. Portion of a Humerus, in which fracture of the shaft occurred many years before death. The ends of the bone did not unite: they are somewhat enlarged, are covered by a substance like fibro-cartilage, and connected by a distinct membranous capsule, which is smooth upon its internal surface, and serves as a kind of capsular ligament to the false joint which is formed between the ununited portions of the bone. III. 3

From a middle-aged woman: the fracture was produced by a slight muscular effort.

862. Portion of a Humerus, in the middle of the shaft of which is an ununited fracture which occurred four years before death. The ends of the bone are enlarged, accurately adapted to each other, and have acquired a hard polished surface on those portions between which there was friction during the movements of the arm. III. 2

The use of the arm was so little impaired by the fracture that the patient worked as a sailor to the time of his death.

Presented by P. Brendon, Esq.

863. Cast of the left Humerus of Dr. Livingstone, showing a False Joint a little above the centre of the bone. The fracture was caused by the bite of a lion thirty years before his death. The left humerus was one inch shorter than the right. The lower portion of the shaft is slightly rotated outwards. A small piece of detached bone was found lying in a cyst in front of the fracture.—See *Lancet*, vol. i, 1874, pp. 565 and 888.

864. The Upper part of a Femur, and sections of an Os Innominatum. On the upper part of the shaft of the femur there are no remains of the head or neck; but between the trochanters is a large and slightly convex surface, increased by broad flat growths of bone from its sides. The cavity of the acetabulum is nearly filled up; there remains only a slight concavity adapted to the surface between the trochanters. The notch of the acetabulum, and the space at which the vessels entered, remain distinct. The form of the osseous substance by which the acetabulum is filled up, makes it probable that it is the head of the femur, which was separated, while it was still an epiphysis, and subsequently united by bone to the walls of the acetabulum. C. 112

This supposition is made more probable by the history of the case. The patient was a woman 60 years of age, who, when she was 8 years old, had a fall on her hip, and was believed to have fractured her thigh. Her limb remained permanently short; but she had never had abscesses, or any other sign of ulcerative disease of the hip-joint.
(In Case H.)

Presented by Henry James, Esq.

865. Section of the Femur of an old man, in which a fracture through the base of its neck, and through the upper part of the great trochanter, occurred many years before death. The neck was driven into the upper part of the shaft between the trochanters; and in this situation a layer of compact bone has been formed on the whole of the broken surface of the cancellous tissue of the shaft and trochanters, in such a manner as to form a smooth excavation, in which the neck of the femur rests. To this excavated surface the neck of the

femur,—itself also covered by compact bone,—was connected by ligamentous tissue. The fracture through the trochanter is completely united by bone.

III. 76

NECROSIS OF FRACTURED BONES (Deviations from the Ordinary Process of Repair in consequence of).

866. Portion of a Humerus, which has been fractured near the middle of its shaft. New bone is formed upon its outer surface, immediately above and below the fracture. The extremity of the lower portion of the bone has perished, and is in process of exfoliation. The fractured surfaces were united by soft connective tissue; and a distinct capsule has been formed around the ends of the bone by the condensation of the surrounding cellular tissue. III. 58

From a girl 23 years old. The fracture was caused by external violence six years before death; she was at the time affected with syphilis.

Presented by William Taylor, Esq.

867. Section of the shaft of a Femur, exhibiting a fistulous cavity in its interior, with Necrosis of a small portion of the inner layers of its wall. Two bristles are placed in a groove extending to some depth between the dead, and the contiguous living, bone. A vascular membrane, having a soft velvet-like surface, lines the fistulous cavity in the bone. I. 176

The limb was removed by amputation. Thirty-five years previous to the amputation, the femur was fractured; this was followed by abscess in the soft parts, and the formation of a fistulous passage extending into the cavity in the interior of the bone, which passage remained open during the whole period from the time of the fracture to the removal of the limb.

Presented by James Pritchard, Esq., Leamington.

868. The other half of the bone, No. 867, macerated. I. 177

869. A Tibia, showing a fracture at the centre of the shaft. There is no osseous union, but the fragments are kept in apposition by fibrous tissue continuous with the thickened periosteum. The ends of the bone are sclerosed and thickened, and the medullary canal is obliterated for some distance. Two or three small fragments of necrosed bone were found between the fractured extremities.

The specimen was taken from a boy aged 11, who sustained a compound fracture of the leg by direct violence. The fracture apparently united, and he was sent to the convalescent home, but returned in a fortnight with slight inflammation about the fracture, and febrile symptoms, followed by pyæmia, of which he died six and a half months after the occurrence of the fracture.—See *Colston Ward Book*, vol. v, p. 316.

870. Portions of a Tibia and Fibula, which suffered Necrosis after a compound fracture. The fractured ends of both bones overlap, and exfoliation of the ends of the tibia has commenced. There is a superficial groove between the dead and the living bone, with an irregular deposit of new bone upon the contiguous surface of the latter. I. 87

871. Section of a Tibia, in which a compound fracture occurred six months before death. The fractured surfaces, displaced and overlapping, are consolidated by bony matter. The extremity of one of the portions of fractured bone, separated either by the fracture or by exfoliation, lies loose in a cavity between the fractured surfaces. The portion of bone at the bottom of the bottle was found loose in the same cavity. III. 99

872. Sections of a Tibia and a Fibula, from the same limb as the preceding specimen. The tibia is broken about one-third from its upper end; and its two portions, separated to some distance from each other, are held together by new bone abundantly deposited around their external surfaces. Separate fragments of bone were found loose in the osseous cavity between the ends of the fractured portions. A small detached portion of the wall of the tibia has also been driven

into the cancellous tissue of the upper part of the shaft, in which it now lies firmly imbedded. The fibula is fractured two inches below its head; the two portions overlap each other considerably, and are united by a bridge of osseous material extending obliquely between their lateral surfaces. C. 93

(In Case H.)

873. Sections of a Tibia and Fibula. There has been a compound fracture of both bones about two inches above the ankle-joint. A vacancy is seen in the tibia in the situation of the fracture, from which probably a portion of bone has been removed, and at the bottom of which there is a piece of dead bone not yet separated. A portion of the fibula also has necrosed, and is partially separated. The upper and lower fragments of the tibia have not approximated, but are united by a strong bridge or splint of bone behind them, and there is a firm and extensive union of the tibia to the fibula, at and below the seat of fracture. The fracture of the fibula is firmly and smoothly united. C. 21

(In Case H.)

874. Portions of a Tibia, Fibula, Astragalus, and Os Calcis, from a limb in which compound fracture of the lower end of the tibia and fibula occurred two years previous to amputation. There is an abundant deposit of osseous substance around the fractured portions of the tibia and fibula. Two portions of bone, one belonging to the articular end of the tibia, the other comprising all that remained of the astragalus, were found loose in the cavity of the ankle-joint, and in a deep ulcerated cavity in the lower end of the tibia. The small portion of the os calcis which remains retains but little of the natural form of the bone. C. 98

(In Case H.)

875. The Bones of a Leg, exhibiting the effects of a compound fracture of both of them near the ankle, and of a simple fracture of the tibia near the knee-joint. Near the ankle, the fractured portions are irregularly united at a right angle with each other, the lower portions being turned inwards. In the lower part of the tibia there is a large irregular cavity, communicating both externally and with the joint, in which several loose pieces of bone were contained. The upper part of the shaft of the fibula has not united with the lower part, but the latter is firmly fixed to the tibia. The fractured portions of the head of the tibia are firmly, but irregularly, united. C. 106

These injuries were the consequences of an accident which occurred a year before amputation.

For other Specimens of Necrosis of Fractured Bones, vide Nos. 196, 197, 240, 241, 242.

(In Case H.)

FRACTURES OF PARTICULAR BONES.

FRACTURE OF THE BONES OF THE SKULL AND FACE.

876. A Skull-Cap, in which a fracture extending from the middle of the frontal to the posterior part of the right parietal bone has been firmly united. It has the appearance of a sabre-wound. C. 45

(In Case H.)

877. A Skull, in which there have been two wounds, each about an inch and a half in length, one in the frontal, and the other in the left parietal bone. They have both been healed. C. 44

(In Case H.)

878. Two portions of a Frontal Bone. A depression, like a cut, is seen on the external surface in front of the coronal suture. The inner surface, over a con-

siderable extent of both portions, is roughened and tuberculated by deposit of new bone.

From a man, aged 37, who, nine months before his death, fell off a van and injured his head. A week before his death he had an epileptic fit, and a succession of fits a few hours before he died.

(In Case H.)

879. Posterior portion of the right Parietal Bone of a boy aged 3 years, showing a compound depressed fracture of the skull. The small portion of bone suspended was detached and found lying on the dura mater. Death took place from meningitis.—See *Lawrence Ward Book*, vol. ii, p. 172.

880. Portion of the Parietal Bone of a child, on which a sharp piece of a chimney-pot fell from a house-top. It made a circular aperture in the skull, half an inch in diameter, and forced the bone which was included within this circle into the substance of the brain. Portions of the bone thus driven in remain attached to the margin of the aperture. III. 116

The child remained for three weeks with scarcely any of the usual symptoms of injury of the brain. Inflammation of the brain then ensued, and soon ended fatally.

881. Part of the Parietal Bone of an infant, with an effusion of blood between the skull and dura mater. This effusion, as well as a similar effusion between the skull and the pericranium, appeared to have proceeded (at least in part) from a fissure, about an inch long, through the parietal bone, at the margin of the effusion. The blood forms a circumscribed oval layer, about half an inch thick, and is coagulated. Thin plates of porous new bone have been formed in the dura mater around part of the margin elevated by the effused blood, as well as in distinct patches nearer to the centre of the part thus elevated. The bone appears to be formed between the two layers of the dura mater: a portion of the inner layer is reflected from the surface of the new bone over which it lay, and is indicated by a bristle. A small quantity of new bone is also formed on the inner surface of the skull, near the margin of the effused blood: but there is no appearance of any being formed beneath the blood. VI. 71

The infant was twenty-five days old, when it died with convulsions, which had commenced two days before its death. Previous to these it had been healthy, with the exception of a slight diarrhœa.

The case is related by Dr. West, and the preparation is engraved, in the *Medico-Chirurgical Transactions*, vol. xxviii, p. 397. London, 1845.

Presented by Dr. West.

882. The right Occipital Portion of the posterior Fossa of the base of the Skull from a girl aged 9 years, showing a circular depressed fracture, the size of a shilling. The outer table, though depressed, is apparently entire, with the exception of a fissure, which extends along one-third of the margin of the depression. The inner table is fissured in three or four places. The fracture was not detected during life.

883. A Skull-Cap, in which a fracture with depression of the left parietal bone occurred many years before death. The fracture comprised a circle of bone, an inch in diameter, which was starred at its centre and surrounded by a nearly circular fissure. The fracture is united, but the depression still remains; the centre of the depressed portion is nearly half an inch below the level of the contiguous internal surface of the skull. C. 43

(In Case H.)

884. A Skull, showing a deep funnel-shaped indentation with rounded edges which penetrated the bone obliquely at a point posterior to the parietal eminence. A portion of the internal table, as large as a crown piece, has been detached, but is now imperfectly united to the skull. For a considerable distance around the

depression, both on the vertex and base of the skull, the bone is extremely thickened and somewhat indurated.

The history is unknown.
(In Case H.)

885. Section of a Skull-Cap, exhibiting a comminuted circumscribed fracture of the outer and inner tables of one of the parietal bones. Many pieces of the inner table are depressed. III. 84

During life the outer table was raised by the elevator, and it was supposed that the instrument was acting upon the whole thickness of the skull, whereas the fragments of the inner table remained unmoved.

886. Section of a Skull-Cap, exhibiting a fracture extending in several directions through the anterior part of the parietal bones. In one situation there is a fracture of the outer, without any corresponding fracture of the inner, table. III. 83

887. A Skull-Cap, in which fracture with loss of bone was produced by the wheel of a cart passing over the head several years before death. The frontal and right parietal bones were broken into many pieces, and the sagittal and coronal sutures were separated. Several portions of bone, which were detached by the fracture, were removed, leaving numerous and considerable apertures in the skull; other detached portions are thinned by absorption, but their edges are re-united by osseous substance. Considerable thickening of the frontal bone has taken place in one situation contiguous to the fracture. No new bone appears to have been formed in the spaces left after the removal of the loose fragments. III. 63

888. Portion of a Skull, in which an extensive fracture of the adjacent parts of the occipital and parietal bones occurred four years before death. Some portions of bone, detached by the fracture, were removed at the time of the accident; other portions were left, and have been re-united by bone. There is also a close union by bone of two lines of fracture, extending outwards through the parietal bones. The margins of all the broken portions of bone have been smoothly rounded, and their exposed diploe is covered in by compact bone. III. 38

Vide Nos. 741, 744, and 789.

889. The right Temporal Bone. A fracture passes from the upper part of the squamous portion just below the squamous suture, perpendicularly down through both the upper and lower walls of the external auditory meatus. It then extends through the petrous bone, passing across the tympanum, in front of the superior semicircular canal into the internal auditory meatus, and apparently traversing the base of the cochlea. The line of fracture then extends from the lower part of the internal auditory meatus into that portion of the foramen lacerum posterius which transmits the eighth pair of nerves. The anterior and posterior portions of the petrous bone are therefore completely severed at the level of the external and internal auditory meatuses. The membrana tympani has been exposed by the removal of the bone; it is soft and much swollen; there is a large perforation just below the processus gracilis. A rent appears to have passed vertically through the middle of the membrane, the upper part of which is now glued together by lymph. The tympanum and anterior mastoid cells have been laid open; lymph was found in both situations. The bones of the internal ear are not disturbed. A coloured injection, which was thrown into the external meatus by plugging the opening with a cork, passed without using the slightest force through the internal auditory meatus and escaped from within the sheath of the seventh pair of nerves.

From a child, aged 13 months, who fell off a bed and struck its head against a mangle.

The child was admitted to the hospital with vomiting, insensibility, and bleeding from the right ear. The next day there was a profuse discharge of clear watery fluid from the external meatus, continuing until death took place from meningitis on the third day after the accident. —See *Stanley Ward Book*, vol. vii.

The case is described by Mr. Eve in the *Clinical Society's Transactions*, vol. xiii, 1880.

890. The greater portion of a Temporal Bone removed from the base of a skull which was fractured. The line of fracture passes through the external auditory meatus into the tympanum, detaching the portion of bone forming the upper wall of the meatus. It passes through the carotid canal and detaches the apex of the petrous bone. The internal auditory meatus is intact, and the labyrinth appears not to have been involved in the fracture. III. 130

891. Portions of the middle and posterior fossæ of the base of the Skull. A line of fracture extends from the foramen magnum across the groove for the lateral sinus and the foramen lacerum posterius, and vertically through the petrous portion of the temporal bone. In its course it passes through the auditory meatuses, the tympanum and vestibule, and divides the membrana tympani. The line of fracture also extends upwards for a short distance through the squamous portion of the temporal bone.

The patient died with the symptoms produced by a fracture of the base of the skull. The case is fully reported in the *Medical Times and Gazette*, 1863, vol. i, p. 185.

(In Case H.)

892. A portion of the right side of the base of a Skull. A fracture extends vertically through the petrous portion of the temporal bone, traversing the external auditory meatus and labyrinth.

From a boy, aged 11 years, who died five days after having been run over by a heavy van. There was a discharge of colourless fluid from the ear.—See *Colston Ward Book*, vol. iii, pp. 75 and 421.

(In Case H.)

NASAL BONES.

893. Section of a Skull, in which there has been a transverse and comminuted fracture of the ossa nasi. The fracture is united, with considerable lateral displacement of the lower portions of the bones. C. 83

(In Case H.)

894. Portion of a Skull, in which there has been a fracture extending across the ossa nasi. The fracture has firmly united, but with lateral displacement and overlapping of the lower portions of the bones. C. 72

(In Case H.)

895. Ossa Nasi, exhibiting the union of a transverse fracture a short distance above their lower borders. III. 75

ZYGOMA.

896. Part of a Skull, in which a depression of the zygoma into the temporal fossa appears to indicate that there has been a fracture near the junction of its malar and temporal portions. C. 100

(In Case H.)

LOWER JAW.

897. A portion of the right side of the body of the Lower Jaw, showing a Fracture which extends obliquely through the bone between the canine and bicuspid teeth, and passes through the mental foramen. A thin layer of the compact wall of the bone, including part of the alveolar border has been split off from the inner side. The specimen was taken from a middle-aged man, who fell in a fit of apoplexy.

FRACTURES OF THE BONES OF THE TRUNK* AND EXTREMITIES.

STERNUM.

898. A Sternum, fractured transversely through its second portion near its junction with the third. c. 47

(In Case H.)

899. A Sternum, fractured transversely through its second portion near its junction with the first. c. 46

(In Case H.)

RIBS.

900. Two Ribs which have been fractured. In one rib the fracture occurred near its middle, and in the other near its angle. There has been very little displacement of the ends of the bones, and the fractures are firmly and smoothly united. c. 23

(In Case H.)

CLAVICLE.

901. A Clavicle, which has been broken near the middle of its shaft. The fracture is united with displacement, the scapular end of the bone being beneath its sternal end. c. 32

(In Case H.)

902. A Clavicle, which has been fractured obliquely near the middle of its shaft. The fracture has united, with scarcely any irregularity of the surface of the bone. c. 68

(In Case H.)

For other Fractures of the Clavicle, see Nos. 743, 780, 785, 799, 828, 860, *and Series IV, No.* 1018.

SCAPULA.

Body.

903. A Scapula, which has been broken vertically through its infra-spinous portion, and apparently through the acromion. Both fractures are united by bone. c. 33

(In Case H.)

Vide No. 909.

Acromion Process.

904. A Scapula, in which there has been a transverse fracture of the acromion through the middle. The fracture was not united by bone, but probably by fibrous tissue: for, though it may be inferred, from the appearance of the bone, that the fracture occurred a considerable time before death, yet the portions do not seem to have moved on each other. c. 28

(In Case H.)

Vide No. 836.

Coracoid Process.

905. A Scapula. The extremity of the coracoid process has been separated from the rest of the bone, probably by a fracture. There has been no attempt at bony union, the fragment being kept in position by dense fibrous tissue. c. 120

From a body brought in for dissection.

(In Case H.)

906. Right Scapula, showing a fracture of the extremity of the coracoid process.

From the body of a male brought to the rooms for dissection.

(In Case H.)

Vide No. 909.

HUMERUS.

Anatomical Neck.

907. A Scapula and Humerus, in which there has been a dislocation of the head, with a fracture of the anatomical neck, of the humerus. The head of the bone

* For Injuries of the Vertebræ, *see* p. 166.

was found resting against the anterior border and concave surface of the scapula, close to the glenoid cavity, and below the coracoid process. A deposit of osseous substance, forming a hollow articular surface, has taken place upon the scapula in this situation. The fracture of the humerus had been united by fibro-cartilaginous substance, which was removed in maceration. c. 103

These injuries were the consequence of a fall upon the shoulder, about three months before death. The patient was a man upwards of 50 years of age.

(In Case H.)

Surgical Neck.

908. Bones of a Shoulder-Joint, exhibiting a fracture through the shaft of the humerus, just below the tuberosities. c. 104

(In Case H.)

Vide No. 845.

Separation of the Upper Epiphysis.

909. A Scapula, with part of the Humerus, from a young person. A fracture extends through the body of the scapula, and through the base of the coracoid process. There is also a separation of the head from the shaft of the humerus at the line of union of the epiphysis. c. 89

(In Case H.)

Shaft.

910. Sections of a Humerus, which has been fractured obliquely just above the middle of its shaft, and has been firmly repaired. The shaft is strongly arched backwards, probably from rickets. c. 25

(In Case H.)

911. Sections of a Humerus, which has been fractured rather below the middle of its shaft. The ends of the bones overlap, and the lower portion is united by intermediate bone to the anterior surface of the upper one. The exposed medullary tube is, in both portions, smoothly covered-in by a layer of compact bone. c. 61

(In Case H.)

For other Fractures of the Shaft of the Humerus, vide Nos. 781, 782, 791, 800, 827, 846, 861, 862, 863, 866, *Series IV*, Nos. 1021, 1027.

Lower Extremity of the Humerus.

912. A Comminuted Fracture of the lower extremity of the left Humerus. A transverse fracture passes obliquely through the bone above the level of the condyles, and a vertical fracture extending from this into the elbow-joint, separates the capitellum from the remainder of the articular surface of the humerus.

From a man, aged 47, who died after secondary amputation of the arm. The injury was produced by a fall upon the elbow.

(In Case H.)

913. The bones of an Elbow-Joint. A fracture extends in two directions through the internal condyle of the humerus into the elbow-joint. The two portions of the condyle separated by the fracture have not been reunited by bone. c. 38

(In Case H.)

914. The bones of an Elbow-Joint. The humerus has been fractured obliquely between the condyles, and transversely a little above them. The fractures are firmly united, but the internal condyle is flattened and elongated. The articular surface of the ulna is adapted to this altered form of the humerus. It is uncertain whether the ulna has been broken. c. 36

(In Case H.)

915. A Humerus, which has been fractured in several directions, but chiefly obliquely downwards, just above the condyles. The fractures are firmly united, but an aperture remains in the line of one of them. c. 24

(In Case H.)

916. Portion of a Humerus, in which distinct fractures extend vertically through both its condyles into the elbow-joint. The fractured surfaces are united by fibrous tissue. III. 46

917. The external Condyle of a Humerus, which was completely detached in a compound fracture. III. 120

The fracture was repaired without the supervention of any untoward symptoms; and the boy recovered a free power of rotation, and a limited power of flexion and extension of the arm.

Vide Nos. 1033, Series IV.

FRACTURES OF THE RADIUS AND ULNA.

Olecranon.

918. An Elbow-Joint, exhibiting a transverse fracture extending through the base of the olecranon into the cavity of the joint. A portion of quill is passed between the ununited fractured surfaces. III. 6

919. The bones of an Elbow-Joint, exhibiting a recent fracture of the lower part of the olecranon, extending into the interior of the joint. C. 65

(In Case H.)

Shafts.

920. A Radius and Ulna, the former fractured about its middle, the latter at a corresponding point, and also at its lower third. The articular surface of the radius at the wrist is rough and irregular from the formation upon it of new bone, and a similar appearance is presented by the corresponding extremity of the ulna. C. 128

(In Case H.)

921. A Radius and Ulna, both of which have been fractured about three inches above their carpal ends. The ends of the bones overlap and have united in this position, with considerable shortening and deflection towards the ulnar side. C. 73

(In Case H.)

922. A Radius and Ulna. The radius has been fractured at the middle of its shaft. The ends of the bone, projecting forwards and inwards close to the ulna, have been smoothly united in this position. C. 62

(In Case H.)

For other Specimens, see Nos. 749, 792, 818, 829, 837, *and* 1029, 1030, 1032, *in Series IV.*

Lower Extremities of the Radius and Ulna.

923. Portions of a Radius and Ulna, showing fracture with extensive comminution of their lower extremities. The fractures extend in several directions, both vertically and transversely; their position is indicated by bristles placed in the soft fibrous tissue by which they are united. III. 95

924. Parts of a Radius and Ulna, with adjacent carpal bones. The radius is fractured at its carpal extremity, the proximal portion of the bone being driven into the distal extremity, completely crushing it. The fracture extends in many places into the wrist-joint. The proximal portion of the shaft is displaced inwards, carrying with it the ulna; the latter bone is torn away from the triangular ligament to which the top of the styloid process remains attached. The scaphoid is broken across about its middle, and between the two fragments the tendon of the extensor carpi radialis brevior was firmly gripped, and is still held.

From a man, aged 45, who died from other injuries five hours after admission into the Hospital.

925. The carpal extremities of a Radius and Ulna, showing a comminuted fracture of the former bone, extending into the wrist-joint. A very small amount

of displacement exists as the result of the injury, which, during life, was indicated solely by pain, and inability to move the part affected. III. 125

The fracture was consequent upon a fall on the palm of the hand. The man received, at the same time, such severe internal injuries, that he died a few hours after his admission.

926. Portions of a Radius and Ulna. The radius has been fractured a little more than an inch above its carpal end. The union is firm, but there is a prominent angle on the dorsal aspect in the line of the fracture, and an elevation of new bone on the corresponding part of the palmar surface, where it is probable that the palmar margin of the upper fragment was driven into the cancellous tissue of the lower one. The triangular fibro-cartilage was almost completely separated from the radius. III. 89

A Cast of the wrist is preserved, No. 25.

927. Section of the Radius of a young man, which has been fractured three-quarters of an inch above its carpal articular surface. The dorsal margin of the upper fragment is driven into the cancellous tissue of the lower one: their palmar margins are in contact, but a projecting angle is here formed, in the front of the wrist, at the line of fracture. The fracture is united, and new bone is formed in the angle between the displaced dorsal margins of the fragments. III. 78

928. Sections of a Radius. At its carpal end there has been a transverse fracture immediately above the line of the epiphysis, and the posterior or dorsal margin of the upper fragment has been driven into the cancellous tissue of the lower one. The palmar margin of the upper fragment projects forwards, or in the direction of the palm; and the dorsal surface of the lower fragment projects far backwards, similarly to that in No. 927, but differently from that in No. 926, The fracture is united, and a buttress of new bone has formed on the dorsal and radial sides of the displaced portions. III. 94

929. A Radius and Ulna. The radius has been broken about three-quarters of an inch above its lower end. The fracture is united, with the lower portion of bone displaced towards the radial and dorsal aspect of the upper portion. In consequence of the shortening of the radius, induced by this displacement, a new articular surface has been formed on the lower end of the ulna, by the growth of a half-ring of bone upwards from the margin of the surface by which it before articulated with the radius. The carpal articular surface of the ulna thus projects far beyond that of the radius. C. 31

(In Case H.)

930. Portion of a Radius, which has been fractured about an inch above its lower end. The fracture has united with a considerable overlapping of the ends of the bone, the palmar margin of the upper portion projecting with a sharp edge towards the palm, while its posterior or dorsal margin is driven into the cancellous tissue of the lower portion. The lower portion with the carpal articular surface of the radius is consequently deflected strongly backwards, or towards the dorsal region of the fore-arm. C. 35

(In Case H.)

Vide Nos. 924, 1030.

Separation of Lower Epiphyses.

931. The carpal extremities of the Left Radius and Ulna. The portion of the radius is separated from the shaft at the line of the epiphysis, and a fracture extends into the wrist-joint. The lower end of the ulna is fractured above the epiphysial line, and the styloid process is broken off.

From a boy, aged 14 years, who fell from a window, and died from injuries to the head. (In Case H.)

932. The lower extremities of the Right Radius and Ulna. The radius is frac-

tured transversely an inch and a quarter from its articular surface. The shaft was driven into, and firmly impacted in, the cancellous tissue of the lower extremity, and the latter was displaced backwards. The epiphysis of the ulna is separated from the diaphysis, and broken into several pieces.

Owing to the impaction no crepitus could be felt, even after the removal of the surrounding soft parts.

From the same case as the preceding specimen.

(In Case H.)

CARPAL BONES.

Vide No. 924.

METACARPAL BONES.

933. Bones of a Carpus and Metacarpus. The proximal extremity of the metacarpal bone of the thumb has a widely expanded and flattened surface, by which it articulated with a similarly deformed surface on the trapezium. C. 108

It is probable that these changes were the consequences of a fracture of the metacarpal bone extending into the joint.

(In Case H.)

SACRUM.

934. Section of a Sacrum, in which there appears to have been a transverse fracture of its lower extremity immediately above the coccyx. A layer of new bone is formed over the supposed line of fracture. C. 101

(In Case H.)

OS INNOMINATUM.

935. Portion of an Os Innominatum, exhibiting a united fracture, with absorption of bone, in the bottom of the acetabulum. The fracture extended in several directions from the centre of the acetabulum to its circumference. III. 62

The fracture was caused by a fall on the trochanter major a few months before death.

936. The Bones of a Hip-Joint. A fracture extends in several directions through the os innominatum. The fracture through the bottom of the acetabulum permitted the head of the femur to sink into the cavity of the pelvis. C. 64

These injuries were the effects of a fall from a considerable height.

(In Case H.)

937. An Os Innominatum. A fracture has split the acetabulum into four portions which are widely separated. From the acetabulum as a centre, fractures also extend through the body and ramus of the pubes; through the ischium between its spine and tuberosity; and through the ilium, vertically to its crest, and obliquely to its anterior spine. C. 40

(In Case H.)

938. An Os Innominatum. A fracture extends in two directions through the acetabulum. The posterior wall of the acetabulum being separated, and held in its place only by the cotyloid ligament, permitted the head of the femur to pass upwards upon the dorsum of the ilium. C. 41.

Vide Nos. 1036, 1038, 1040.

(In Case H.)

939. Fracture of the horizontal ramus of the Os Pubis, close to the acetabulum, and of the descending ramus at its junction with the ischium.

From a woman, aged 36, who died four weeks after the accident.

(In Case H.)

940. An Os Innominatum, in which there appears to have been a fracture of the ramus of the ischium near the tuberosity. New bone is formed around the supposed seat of fracture. C. 99

(In Case H.)

941. Section of the Pubic Bones of an adult, exhibiting a fracture of one of the

descending rami, which has been firmly united, but with displacement of the fragments. C. 87

(In Case H.)

FEMUR.

Intra-Capsular and Extra-Capsular Fractures of the Neck of the Femur.

942. A Hip-Joint exhibiting a vertical fracture, of recent occurrence, through the intra-capsular portion of the neck of the femur. The capsule is thickened, and a portion of it, which is detached and turned downwards, has lymph deposited upon its internal surface. III. 8

943. A Hip-Joint, exhibiting an intra-capsular fracture of the neck of the femur. The capsule is much thickened, and the neck of the femur is absorbed. III. 23

944. Portion of a Femur, showing an intra-capsular fracture of the neck which occurred a short time before death. The synovial and periosteal membranes are entire on the posterior surface of the neck. III. 54

945. Portion of a Femur, exhibiting a vertical fracture, of recent occurrence, through the intra-capsular portion of its neck. Upon the anterior half of the circumference of the neck of the bone, the periosteal and synovial coverings are torn: upon the posterior half they are entire. III. 7

946. Portion of a Femur, exhibiting an intra-capsular fracture through its neck. The direction of the fracture is such, that the surface of the bone exhibits on the one side an eminence, and on the other a corresponding cavity. The periosteum and the synovial membrane covering the neck are torn in only the anterior half of its circumference: upon the other half, the membranes are entire and still connect the two parts of the bone, which may thus, as well as by the mutual adaptation of the uneven surfaces of the fracture, have been held together with very little displacement. III. 18

947. Portion of a Femur, in which there is a fracture extending vertically through the neck, from the upper margin of the head to the middle of the lower margin of the neck. C. 55

(In Case H.)

948. The upper part of a Femur, fractured at the junction of the head and neck, a fortnight before death. The portion of the neck which remains attached to the shaft is much reduced in size, so that it no longer corresponds to the other fractured surface. C. 113

There was no shortening or eversion of the limb. The edge of the fractured neck rested against the edge of the acetabulum.

(In Case H.)

949. Portions of a Femur, which was fractured vertically through the neck, at the base of the head, a few weeks before death. The plane of the fracture is irregular and the fragments were locked together, so that the principal indications of fracture were absent. C. 115

(In Case H.)

950. Sections of the upper part of a Femur. The neck has been fractured at its base, and driven deeply into the substance of the great trochanter, which is comminuted.

From a woman, aged 74 years, who was knocked down by a cab. Immediately after the accident she presented the symptoms of fracture of the neck of the thigh bone, viz., shortening, eversion of the limb, and crepitus at the hip on rotation. On the next day, shortening was less apparent, no crepitus could be felt, and the limb could be completely flexed on the abdomen with comparatively little pain; she could not, however, lift the heel from the bed.

She was kept in bed for about a week, and then was allowed to get up and sit in a chair. She was now able, by holding by the side of the bed, to move about the ward, but gradually becoming weaker, she died exhausted, five weeks after the fall.

951. A Section through the upper part of a Femur, showing a fracture at the base of the neck, which is driven into the upper part of the shaft. The neck has undergone absorption to a considerable extent, and the cavity in which it lies has probably been enlarged by the same process. III. 77

From a woman 85 years old. The fracture occurred three years before death.
Presented by William Radnor, Esq.

952. Portion of a Femur, showing a fracture of its neck. The upper portion of the shaft is extensively comminuted. The trochanters are entire. III. 16

953. Portion of a Femur, exhibiting a fracture through its neck, and another completely detaching the great trochanter from the shaft. Two distinct lines of fracture may be traced, one across the base of the neck, the other passing obliquely through the shaft just in front of, and below the trochanter major, and through the trochanter minor. The base of the neck is fixed between the fragments, but not tightly. III. 14

954. Portion of a Femur, showing, as in the last described, a fracture through the base of the neck, and separating the greater portion of the trochanter major and the trochanter minor from the shaft. One line of fracture passes vertically through the base of the neck; the other extends vertically through the middle of the great trochanter and for about three inches down the shaft, and through the trochanter minor. The head is impacted between the fragments, and osseous union has taken place in the lower part of the vertical fracture. III. 15

955. Portions of a Femur in which there has been fracture through the base of the neck, and, apparently, a fracture through the trochanter major. The base of the neck has been driven into the cancellous tissue between the trochanters, in which situation it is firmly united by bone and fibrous tissue. The fracture of the trochanter has been firmly united by bone. III. 12

956. Portion of a Femur, in which fracture of the neck and of the trochanter major occurred six weeks before death. The direction of the fracture is still evident; it extended through the base of the neck, and through the base of the trochanter major, nearly detaching this process from the rest of the bone. The head and neck were forced downwards and impacted between the trochanters. The several parts of the bone thus brought into contact are united so firmly that they could not be moved upon each other. III. 10

957. Specimen of impacted fracture of the neck of the Femur. II. 94

From an old man, aged 84 years, who lived for two years after the injury. The parts are well united.
Presented by Tory Hester, Esq.

958. Upper portion of a Femur, showing an extra-capsular fracture of the neck, with no evident displacement. The attachment of the ilio-femoral ligament in front of the trochanter major is not torn through.

There was no appreciable shortening of the limb, and slight eversion only was observed during life, probably owing to the condition of the above-mentioned ligament.—See *Colston Ward Book*, vol. v, p. 348.

959. Portion of a Femur, in which there has been a fracture extending through the base of the neck, and very obliquely through the trochanter major, which is split into two portions separated to some distance from each other. The

fracture is firmly and smoothly united; but the trochanter is drawn up above the level of the head of the bone. c. 95

(In Case H.)

Presented by H. B. Oakes, Esq.

960. The upper part of a Femur, in which a fracture extends obliquely downwards and inwards, from the middle of the great trochanter through the base of the neck, and ends just above the lesser trochanter. There is no union of the fragments, but they are held together by portions of the periosteum. c. 117

From a man, 82 years of age, who died a fortnight after the injury, which was produced by a fall on the floor. The limb, directly after the fracture, was shortened about half an inch, and was inverted, the toe resting on the opposite instep. It was movable and could be everted, but, of itself, it became again inverted.

(In Case H.)

Presented by Charles Miles, Esq.

961. The head and neck of the right Femur, from an old man aged 85 years. Seven months before his death he fell and fractured the neck of his thigh-bone, and the radius and ulna of the corresponding arm. The latter united perfectly in about six weeks. The femur has been broken in two directions. The bone, divided longitudinally, shows the course of these fractures, the principal one of which extends obliquely through the neck. In the posterior portion firm bony union has taken place. The fragments of the anterior portion separated during maceration. c. 131

(In Case H.)

Presented by Charles Miles, Esq.

962. Portion of a Femur, in which there has been fracture extending through the base of its neck, and obliquely through the base of the trochanter major. The fractured surfaces have firmly united, but the shaft has been drawn upwards and forwards, so that the head and neck of the femur appear much below their natural situation. In this position a bridge of bone has united the base of the head of the femur to the margin of the posterior inter-trochanteric ridge. c. 49

(In Case H.)

963. Sections of a Femur, in which there has been fracture extending obliquely through the trochanter major and the base of the neck into the posterior part of the shaft. There is firm union of the fractured surfaces, but the two portions of the trochanter major are separated to some distance from each other. c. 57

The patient was a woman 60 years old. After a fall on her hip, she had signs which led to the suspicion of dislocation of the head of the femur, for the posterior portion of the fractured trochanter major, being drawn backwards towards the ischiatic notch, felt like the head of the bone. She died about three years after the accident. The case is described by Mr. Stanley, in the *Medico-Chirurgical Transactions*, vol. xiii, p. 505. London, 1825.

(In Case H.)

For other Specimens of Fracture of the Neck of the Femur, see Nos. 745, 751, 752, 786, 787, 793, 794, 830, 838, 839, 840, 847 to 853.

964. Sections of the Head and Neck of a Femur, from an aged woman. On the surface of each section a white line is visible, which extends obliquely from above downwards and inwards, in a plane which would include the base of the neck at its upper part and the base of the head at its lower part. The line marks the section of a thin layer of fibrous tissue, and appears to indicate that a fracture of the neck of the femur has been united partly by fibrous tissue and partly by bone. The head of the femur is below the great trochanter, and there

is an accumulation of bone on the posterior surface of the neck, in a line corresponding with the direction of the presumed fracture. III. 21

965. Sections of the Head and Neck of the other Femur of the same woman. They present the same appearances as those last described, but the line of fibrous tissue is here uninterrupted, while in the preceding it is in some places interrupted by small portions in which the osseous tissue is continuous, as if the fracture had in them united by bone. III. 22

The preparations were taken from a body supplied for dissection, of which no history could be obtained.

For drawings of this and the preceding specimen, *see* Nos. 49, 50, 51.

966. Portions of a Femur, in which there appears to have been a fracture extending vertically through the base of the neck. The fracture has been completely repaired, but with such a displacement of the head and neck that they form a right angle with the shaft, and are depressed below the summit of the trochanter major. C. 96

(In Case H.)

Presented by H. B. Oakes, Esq.

967. Portion of a Femur, in which a fracture is believed to have occurred, many years before death, through the base of its neck. The fracture (if one happened) has been completely repaired, for its direction is not indicated by any line in the cancellous texture. Like the preceding specimen, the head of the bone is flattened, and there is a deposit of bone around the articular margin. C. 67

(In Case H.)

Presented by F. Salmon, Esq.

968. Portion of a Femur, exhibiting a depression and shortening of the neck, with flattening of the head, and formation of bone around the articular margin. C. 78

From an aged person. It was believed, from the circumstances of the case, that the neck of the femur had been fractured in a fall, but there are no indications of a fracture having been united.

(In Case H.)

Presented by Thomas Warner, Esq.

Shaft of Femur.

969. Portion of a Femur, in which a fracture extends almost vertically through the trochanter major and five inches downwards to the front of the shaft. The portions are firmly united, but with considerable interspaces, and with projection of the upper portion forwards. C. 80

(In Case H.)

970. A Femur, the shaft of which has been fractured very obliquely, from before backwards and from above downwards, a little below the trochanter minor. The fracture is firmly united, with the upper portion of the bone projecting backwards, behind and to the outer side of the lower portion. C. 70

(In Case H.)

971. Portions of a Femur, in which there has been a fracture through the shaft, a little below the neck, with separation of the trochanter minor. The fracture, which is in almost exactly the same position and direction as that last described, was united by ligamentous substance which separated in maceration. C. 86

The specimen was taken from a man aged 39; the fracture occurred nine months before death. The specimen No. 812 was taken from the same case.

(In Case H.)

972. The upper portion of a Femur, which has been separated from the shaft by a fracture. It shows the spiral course, which a fracture sometimes takes

through the shaft of a bone, in accordance with the spiral arrangement of the fibres of the matrix of the osseous tissue.
(In Case II.)

Presented by Thomas Smith, Esq.

973. Portions of a Femur, exhibiting the union of a comminuted fracture in the upper part of its shaft. The principal fracture appears to have extended obliquely downwards from the trochanter minor. The fracture is firmly united, the upper fragment lying in front of the lower. The cancellous texture of the bone is continuous in the united fragments. C. 71
(In Case H.)

974. A Femur, which was fractured through the middle of its shaft. The fracture is firmly and smoothly united, with the upper portion of the bone projecting slightly forwards, and the lower portion rotated outwards. C. 84
(In Case H.)

975. Sections of a Femur, which has been fractured about four inches below its upper end. The fracture is firmly united with some displacement of the ends of the bone, and the walls and cancellous tissue of the two portions have coalesced and become continuous. C. 16
(In Case H.)

976. Section of a Femur, in which there was an oblique fracture through the shaft near the condyles. The upper portion of the bone projects far down in front and on the inner side of the lower portion; but their adjacent surfaces are firmly united by intermediate new bone. III. 103

For other Specimens of Fracture of the Shaft of the Femur, see Nos. 746, 750, 754, 755, 759, 765, 766, 783, 784, 797, 802 *to* 804, 810 *to* 813, 815, 816, 817, 819 *to* 823, 826, *and* 831.

Lower Extremity of Femur.

977. The Lower two-thirds of the shaft of a Femur, showing a comminuted fracture of the lower end of the shaft and of the epiphysis, extending into the knee-joint. The fracture extends nearly vertically along the centre of the shaft to the junction of the lower with the middle third; midway it is joined by a lateral fracture. The fractured surfaces are partially united. Above the upper limit of the fracture is a projecting fragment of new bone, probably formed by a portion of uptorn periosteum. The condyles of the femur are separated, and the anterior portion of the articular surface is detached from them. III. 129

978. Portion of a Femur, showing a comminuted fracture at the lower extremity, which extends down between the condyles into the knee-joint. C. 15
(In Case H.)

979. Portion of a Femur, fractured transversely into many small pieces, just above the condyles. From inflammation in the knee-joint, there has been deep and extensive ulceration of the articular surfaces of the condyles of the femur. C. 14
(In Case H.)

980. Portion of a Femur, which has been fractured in its lower part. The fracture extends transversely through the shaft, and obliquely between the condyles into the knee-joint. The lower end of the shaft is driven-in between the displaced and separated condyles. C. 12
(In Case H.)
For other Specimens, vide Nos. 747, 756, 757, 823.

Separation of the Lower Epiphysis.

981. Portion of a Femur, exhibiting a separation of its shaft from the lower

epiphysis, and a fracture extending between the condyles into the knee-joint. The violence of the injury also occasioned the stripping up of the periosteum from the shaft of the femur to the extent of many inches: the shaft protruded through the muscles on the inner side of the thigh. Parts of the periosteum, which were stripped from the shaft, remained attached to the condyles. A line of new bone is formed on the anterior part of the shaft, along the torn edge of that part of the periosteum which remained attached to the shaft. III. 91

From a boy aged 16. The injury was produced by a rope entangled round the leg. Amputation was performed three weeks after the injury.

982. Portion of a Femur, the lower epiphysis of which was separated from the shaft by an injury, and displaced forwards into its present position. The popliteal vein was pressed upon by the projecting lower extremity of the shaft and gangrene was thus produced.

(In Case H.)

Vide No. 758.

PATELLA.

983. A Patella, in which a vertical fracture occurred a short time before death. The tendinous covering of the anterior surface of the bone is entire. Union of the fracture has not commenced. The articular cartilage is in part absorbed; but this had probably occurred before the fracture. III. 52

984. A Patella, with a small piece of bone, which had probably been broken off, and is now connected by ligament with its lateral border. III. 26

985. A Patella, fractured in three lines leading from the centre to the circumference. The portions are completely and closely united by bone, and with very little displacement, the lower portion alone being pushed somewhat forwards. Some new bone is deposited along the lines of fracture on the anterior surface of the patella; the posterior surface is smooth, and presents no new bone; the margin of one of the fractures has still the appearance of a fracture of recent occurrence. III. 108

It is probable that the fracture was caused by a blow upon the patella.

986. A Patella, showing a fracture which extends transversely through its lower part. The fractured surfaces are in close apposition, and united by soft fibrous tissue; separation was apparently prevented by the untorn expansion over the bone of the tendon of the quadriceps femoris. The outer portion of the anterior surface of the patella is rough and carious; lying upon it is a small fragment of necrosed bone.

From a man, aged 65 years, who was admitted into the Hospital with a slough over the patella, the result of a blow on the part, by which the fracture was probably produced. He was progressing favourably, when he fell down stairs and struck his knee. The joint became painful and much swollen. An incision was made into the joint, and decomposing blood let out; suppuration ensued, and rendered amputation necessary.—See *Henry Ward Book*, vol. vi, p. 307.

987. Two portions of a fractured Patella, which were united by ligamentous substance. The lower portion is much enlarged and altered in form by the deposit of osseous substance upon its borders. III. 72

988. Section of a Patella, in which there has been a transverse fracture. The fractured surfaces are united by a thick band of ligament, about an inch in length, which is smoothly lined, as if by a continuation of the synovial membrane. As in the preceding specimens, the fragments are enlarged, but their texture is unaltered. III. 30

989. A Patella, divided longitudinally. It had been fractured during life, and the separated portions have united by ligament. III. 132

Obtained from the dissecting rooms.
For other Specimens, see Nos. 795, 841, 842, 843, *and* 855.

TIBIA AND FIBULA.

Upper Extremity.

990. The upper extremity of a Tibia, with an oblique fracture just below the head, from which a vertical fracture extends through the articular surface into the knee-joint. The fibula was also fractured in a corresponding position.

From a man, aged 39 years, who fell down a flight of stairs when intoxicated. He died of delirium tremens three days after the accident.—See *Kenton Ward Book*, vol. vi, p. 309.

Shafts.

991. A Tibia and Fibula. The tibia has been fractured in its middle, and the fibula near its upper end. Both fractures are firmly united, but with displacement and overlapping of the fractured ends, so that the tibia at the seat of fracture forms an angle directed backwards, and the fibula an angle directed outwards. Both the bones also are atrophied, and very slender. c. 1

(In Case H.)

992. A Tibia and Fibula, fractured in two places. The bones are firmly united, and osseous tissue seems to have been deposited on portions of the shafts independently of the seats of fracture. In the lower third of the tibia is a considerable cavity, from which fragments of necrosed bone had been removed. c. 124

(In Case H.)

993. A Tibia and Fibula, which were fractured somewhat obliquely near the middle of their shafts. The several portions are firmly united, but with lateral displacement, both the upper fragments being placed on the inner side of the lower ones. The fractured ends are rounded and continuous with the uniting ossifying tissue. c. 110

(In Case H.)

994. A Tibia, which was fractured very obliquely through the middle of its shaft. The fractured portions are firmly united, and so exactly that, on the posterior aspect of the bone, the line of fracture is not discernible. The shaft in the neighbourhood of the injury is thickened, and new bone is deposited on many parts of its surface. c. 109

(In Case H.)

995. A Tibia and Fibula. The tibia has been fractured about one-third from its lower end, and the fibula near its upper end. Both fractures are firmly and smoothly united, but with a slight lateral displacement, the lower fragments converging in the interosseous space. c. 3

(In Case H.)

996. Sections of a Tibia and Fibula, fractured through the middle of their shafts; the fractures are united. There is also lateral union of the two bones, and an abundant deposit of new bone above and below the seat of fracture. c. 91

(In Case H.)

997. Portions of a Tibia and Fibula, the shafts of which were fractured obliquely about three inches above the ankle. The fractures have been firmly united, but with displacement, the lower portion of the tibia having been carried towards the fibula. c. 18

(In Case H.)
For other Specimens, see Nos. 767, 805, 807, 824, 825, 832, 834, 835, 844, 858, 869, 870 *to* 872.

Lower Extremities of Tibia and Fibula.

998. The lower end of a right Tibia and Fibula, showing a united fracture. The line of fracture is indicated by a roughening of the surface of the tibia and a projection on its inner side just above the internal malleolus: it passes obliquely from the outer side downwards and inwards to the projection just above the internal malleolus. The fracture extends into the joint, separating the articular surface into three nearly equal segments: pieces of glass have been inserted into the fibro-cartilage, which unites the fractured articular cartilage. The lower end of the tibia is displaced forward and outward. In order to accommodate the altered shape of the articular surface to the head of the astragalus, a buttress of fibro-cartilage, which is undergoing ossification, has been formed on the anterior margin of the articulation: through this a section has been made to show the healthy cartilage beneath. The fracture of the fibula passes through the bone obliquely, about five inches above the external malleolus: the lower end of the bone is slightly displaced outwards.

From a man, aged 42, who fell from a height of about forty feet on to his foot and back. On his admission to the Hospital, a fracture of the tibia and fibula about two inches above the ankle, was diagnosed. In seven weeks the fracture was firmly united. A year later he cut his throat and died in the Hospital, when the specimen was obtained.—See *Colston Ward Book*, vol. v, p. 213.

999. A partially united "Pott's" Fracture. A fracture extends through the base of the internal malleolus, and there is also an oblique fracture through the fibula two inches above the malleolus. The displacement of the fractured bones is slight.

1000. A united "Pott's" Fracture, at the right Ankle-Joint. There is an oblique fracture of the fibula about an inch and a half above the external malleolus, and the lower end of the bone is driven upwards and outwards. The astragalus is displaced backwards and outwards, and half of its upper articular surface has passed from under the malleolar arch. There is a buttress of bone posteriorly between the tibia and fibula; and also a mass of callus between the astragalus and internal malleolus, which was probably thrown out around a piece of bone torn from the internal malleolus.

The patient died of dysentery nearly four months after the occurrence of the fracture; during the whole of that period she had been confined to bed. Great difficulty was experienced in keeping the parts in position.—*Lawrence Ward Book*, vol. vi, p. 17.

1001. Section through the lower extremities of a Tibia and Fibula. A fracture, firmly united by ossifying fibrous tissue, passes obliquely downwards and inwards through the lower extremity of the fibula. The external malleolus is displaced outwards about half an inch, and also slightly upwards: a portion of the tibia, separated with the external malleolus, lies between the two bones. The internal malleolus has been broken off and rests on the inner part of the articular surface of the tibia. The foot was displaced outwards, and had carried the fragments of bone with it.

From a man, aged 65 years, who died three months after having fractured his leg, by slipping in the street. An ulcer which formed on the heel necessitated the frequent changing of the splints.

1002. The lower extremities of the Tibia and Fibula with the Foot of an elderly woman, exhibiting the effects of an injury which occurred several years before death. The foot is displaced outwards, so that only the inner half of the articular surface of the astragalus is in apposition with the tibia. There has been a comminuted fracture, extending in various directions through the lower end of the fibula and the adjacent margin of the tibia. The separated portions of bone have been completely re-united. c. 107

(In Case II.)

1003. A Foot, with parts of the Tibia and Fibula, exhibiting the effects of dislocation and fracture ten months before death. The foot is dislocated outwards. The tibia is partially separated from the fibula: the internal malleolus projects an inch on the inner side of the astragalus. The astragalus also is partially separated from the scaphoid bone. The fibula has been broken into several portions just above the malleolus. These portions are firmly united, and there is an accumulation of bone both before and behind the articulation between the tibia and the fibula. c. 69

The patient was a lunatic 40 years old. The dislocation was not reduced till a month after its occurrence, and the patient's restlessness prevented the tibia from being maintained in its proper place: but he finally regained complete use and power of the foot. The case is described by Sir William Lawrence in the *Medico-Chirurgical Transactions*, vol. xvii, p. 58. London, 1832.
(In Case H.)

1004. Fracture of the Tibia and Fibula, extending into the ankle-joint. The internal lateral ligament is not ruptured, but the portion of tibia to which it is attached has been torn away from the shaft of the bone.

From a man, aged 42. The injury was produced by direct violence.
(In Case H.)

1005. Portions of a Tibia and Fibula. Fractures extend in several directions, through the shaft and the articular end of the tibia, into the ankle-joint. The fibula also is fractured through the base of the malleolus. c. 88
(In Case H.)

1006. Portions of a Tibia and Fibula. The point of the internal malleolus has been separated by fracture. The fibula is broken two inches above its lower end. c. 39
(In Case H.)

1007. The lower extremities of a Tibia and Fibula. A fracture, which is indicated by pieces of glass stuck in the uniting medium, extends through the base of the internal malleolus; it is firmly united by dense fibrous tissue, which, however, admits of slight movement. Another line of fracture extends through the anterior and outer angle of the articular surface of the tibia; there is a considerable amount of new bone about the tibio-fibular articulation. The astragalus was not displaced. The tendons of the tibialis posticus and flexor longus digitorum, through the grooves of which the fracture passed, were firmly adherent to their sheaths.

From a man who died of delirium tremens seven weeks after having sustained a fracture of the leg, by a box falling on the part. The fibula was fractured about 2½ inches above the ankle.
—See *Kenton Ward Book*, vol. vi, p. 47.

1008. The lower extremities of a Tibia and Fibula. A recent fracture extends through the articular surface and cartilage of the tibia. The communication of this fracture with the ankle-joint is closed by a thin layer of lymph firmly adhering to all the parts of the articular cartilage through which the fracture extends. III. 44

1009. Bones of an Ankle-Joint, exhibiting a double fracture of the internal malleolus, separating it from the tibia, and splitting it into two portions. c. 66

(In Case H.)
For other Specimens, see Nos. 748, 873 *to* 875.

OS CALCIS.

1010. The Foot of a Child, exhibiting a partial dislocation of the astragalus from the os calcis, together with a fracture of the superior and anterior margin of the latter bone. c. 90

The leg was amputated in consequence of other injuries received, together with this, in the passage of a carriage-wheel over the leg and foot.
(In Case H.)

1011. A Comminuted Fracture of the Os Calcis. C. 126
(In Case H.)

1012. An Os Calcis, fractured transversely through its posterior part. The plane of the fracture extends from the posterior border of the upper articular surface to the middle of the posterior surface of the tuberosity. III. 9

The patient fell from a height, but did not strike his heel; and it appeared certain that the fracture of the os calcis was produced by the action of the muscles of the leg. He died of other injuries received in the fall.

FRACTURES OF CARTILAGES.

1013. Section of a Rib with its cartilage. The rib had been separated from the cartilage, but has re-united to it. The union is effected by an abundant deposit of osseous substance, apparently in the texture of the periosteum and perichondrium, and in the contiguous cellular tissue around and for some way above and below the line of separation. III. 82

1014. Portions of Costal Cartilages. There has been a fracture of the cartilage of one of the false ribs. Its portions overlap, and are firmly united by a wedge-shaped ring of bone extending around them. III. 73

1015. Section of the Cartilage of a Rib, which has been fractured and is firmly united. The uniting medium consists of a substance like cartilage with small deposits of bone in it. III. 48

1016. Sections of the Cartilage of a Rib, which appears to have been fractured and re-united by fibro-cartilaginous substance placed in the angles between the ends of its overlapping portions. III. 4

SERIES IV.

INJURIES OF JOINTS, DISLOCATIONS, &c.*

DISLOCATIONS OF THE CLAVICLE.

OF THE STERNAL END.

1017. Portion of a Clavicle, with the upper piece of the Sternum and the First Rib, from an adult. The sternal end of the clavicle is dislocated downwards and forwards. The capsule of its articulation with the sternum is torn; but the costo-clavicular ligament is entire. The first rib is separated from its cartilage.

III. 97

OF THE ACROMIAL END.

1018. A dislocation upwards of the Acromial End of the Clavicle, with fracture of the Shaft. The ligamentous connections between the clavicle and acromion are almost completely torn through. There is a transverse fracture at the junction of the inner with the outer two-thirds of the clavicle, but the periosteum covering the superior and inner surfaces of the bone is intact.

From a man aged 35 years, who fell from a scaffold 15 feet high.

The acromial end of the clavicle projected upwards, and there was so much separation that a finger could be inserted between it and the acromion. Death took place from injuries to the head.—See *Harley Ward Book*, vol. vii, p. 15.

DISLOCATIONS OF THE SHOULDER-JOINT.

SUB-CORACOID.

1019. Dissection of a recently dislocated Shoulder-Joint, which was reduced during life. The deltoid muscle is cut across and reflected; the lower part of the muscle was bruised and separated from the bone to a slight extent. The subscapularis is cut across about one inch from its insertion; its under surface at this point was slightly bruised. Neither this muscle nor the supra-spinatus or infra-spinatus was lacerated. The capsule of the joint was untorn; a small extent of its anterior attachment, with the periosteum with which it was continuous, was detached from the margin of the glenoid cavity and adjacent bone, but the joint was not opened. The capsule has been cut across at its anterior attachment. There is a deep vertical indentation or groove at the posterior margin of the articular surface of the head of the humerus, into which the anterior margin of the glenoid cavity accurately fits. It appears to

* For Dislocation of the Spine see the following series, p. 170.

have been produced by the violent impact of the head against this prominent rim, on which it probably lodged.

From a man, aged 36 years, who was knocked down by a train whilst at work on the line. On admission he was found to have a sub-coracoid dislocation of the right shoulder, in addition to numerous other injuries, from which he died about twelve hours after the accident. The head of the right humerus could be distinctly felt beneath the coracoid process; the axis of the bone was directed considerably outwards and backwards. Reduction was effected extremely easily on slight traction being made in the usual manner.—See *Colston Ward Book*, vol. v, p. 416.

The case is described by Mr. Eve, in the *Medico-Chirurgical Transactions*, vol. lxiii, 1880, p. 317.

There is a drawing of the specimen, No. 55.

1020. A right Shoulder-Joint, exhibiting an unreduced sub-coracoid dislocation of the humerus of long standing. The head of the humerus, with a great part of its cartilage removed, and its articular surface hardened, rests on the anterior surface of the scapula, with a thick layer of fibrous tissue intervening between it and the latter bone. It is directly below, and nearly in contact with, the the coracoid process, just on the inner side of the glenoid cavity, but not below its level: the axillary artery and brachial plexus of nerves are close to it on its anterior and inner aspect. The infra-spinatus, teres minor, and sub-scapularis muscles are shown retaining their natural connections with the head of the humerus. A part of the capsule also is shown. The glenoid cavity retains its natural form, but its articular cartilage is thin and has numerous shreds, apparently of fibrous tissue, upon it. III. 112

The body was brought to the dissecting rooms, and no history could be obtained. Specimen No. 1051 was taken from the same body.

A drawing is preserved, No. 56; and a cast, No. 37.

1021. A Shoulder-Joint with the shaft of the Humerus, exhibiting dislocation and fracture. The head of the humerus is thrown forwards beneath the coracoid process. The tendons of the long head of the biceps, of the supra-spinatus, infra-spinatus, teres minor, and sub-scapularis muscles are entire. There have been two fractures in the shaft of the bone, and they are both firmly united. III. 47

The injury consisted, in the first instance, of the dislocation and a single fracture. No attempt was made to reduce the dislocation, and when the fracture had united, the patient fell down, and sustained the second fracture.

1022. A Shoulder-Joint, in which a dislocation of the Humerus occurred long before death, and was not reduced. The head of the humerus rested on the anterior surface of the scapula, and on the anterior margin of the glenoid cavity, just below the coracoid process. Tough ligamentous tissue has been formed on the scapula, beneath the head of the humerus, and a new fibrous capsule surrounded it. The surface of the glenoid cavity is covered by similar fibrous tissue, and that part of the head of the humerus which was in contact with its anterior margin has been absorbed. The tendons of the biceps, supra-spinatus, infra-spinatus, teres minor, and sub-scapularis muscles are all shown retaining their proper attachments. III. 118

1023. A Scapula and Humerus. The head of the humerus appears to have been dislocated forwards, and to have remained long unreduced just beneath the coracoid process, on the anterior surface and neck of the scapula. A concave surface has been here formed, on which the head of the humerus rested. The pressure of the posterior part of the head of the humerus against the anterior margin of the glenoid cavity, has caused them both to be partially absorbed; and the remaining edge of the glenoid cavity, fitting in the recess in the head of the humerus, forms a kind of new joint between them. C. 27

(In Case II.)

1024. A Scapula and a portion of a Humerus, exhibiting the same consequences of dislocation of the head of the humerus as are shown in 1023. C. 34

(In Case H.)

SUB-CLAVICULAR.

1025. A Shoulder-Joint, exhibiting a sub-clavicular dislocation of the humerus, which occurred eighteen months before death. The head of the humerus rests on the anterior surface of the scapula, near the inferior border. The tendons of the supra-spinatus, infra-spinatus, teres minor, and sub-scapularis muscles are entire. A bristle is passed beneath the tendon of the sub-scapularis, close to its insertion. A bristle is also passed beneath the tendon of the long head of the biceps, which retains its attachment to the edge of the glenoid cavity. Two bristles are passed beneath the circumflex nerve, which has been compressed by the dislocated head of the humerus, and is, in consequence, flattened and firmly adherent to the capsule of the joint. III. 42

The dislocation was followed by permanent paralysis of the deltoid muscle.

SUB-SPINOUS.

1026. A Shoulder-Joint, exhibiting an incomplete dislocation of the Humerus backwards. The head of the humerus, unaltered in form, rests against the posterior border of the glenoid cavity. The tendons of the supra-spinatus and infra-spinatus muscles are detached from the tuberosity of the humerus, but retain their connection with the capsule. The tendon of the biceps is displaced from its groove in the humerus, but retains its attachment to the glenoid cavity. The tendons of the teres minor and sub-scapularis retain their attachments to the humerus. The capsule of the joint is thickened. III. 53

1027. A Humerus and Scapula, exhibiting dislocation which occurred a considerable time before death. The head of the humerus was displaced upwards and backwards upon the dorsum of the scapula. Its anterior margin rested against the inferior surface and the outer edge of the spine of the scapula, in which situation a hollow and partially polished surface has been formed in adaptation to it. The neck of the humerus having moved upon and across the inferior half of the glenoid cavity and the adjacent part of the lower border of the scapula, their opposite surfaces are here accurately adapted and highly polished: the surface of the scapula at this part is broad and convex, while that of the humerus is deeply hollowed out. The lower part of the glenoid cavity has disappeared, being comprised in the new joint formed with the neck of the humerus. The head of the humerus is altered in its form by the irregular deposit of bone on its surface: the upper half of the glenoid cavity is also flattened and nodulated. A fracture through the middle of the shaft of the humerus has been firmly united, but with an angle directed outwards. C. 79

For a cast of this shoulder, before the removal of the soft parts, *see* No. 39.
(In Case H.)

DISLOCATIONS OF THE ELBOW-JOINT.

RADIUS AND ULNA BACKWARDS.

1028. An Elbow-Joint, exhibiting a dislocation of the Radius and Ulna backwards, which occurred a considerable time before death. The articular surface of the humerus was completely covered by a newly-formed capsule, the cavity of which is laid open in front. The head of the radius and the articular surface of the ulna are also inclosed in new capsules, separated from each other and from that which incloses the articular end of the humerus. The sigmoid cavity

of the ulna appears to rest on a prominence of bone, extending from the posterior surface of the trochlea of the humerus. The head of the radius is confined in the place which it now occupies by a thick fibrous cord, extending from its upper surface to a process of bone connected with the margin of the humerus just above the outer condyle. III. 33

1029. An old dislocation of the Elbow-Joint. The radius and ulna are dislocated backwards and slightly outwards: they are bound firmly to the humerus by a large amount of fibrous tissue, which, however, permits slight movement of the bones on each other. The articular surfaces are completely absorbed and covered by fibrous tissue. The outer part of the articular surface of the humerus is extensively absorbed in correspondence with the outward displacement of the bones of the forearm; possibly a fracture occurred in this situation, as a large mass of bone can be felt in the fibrous tissue over the extremity of the ulna. The upper end of the radius is firmly fixed to the ulna and lies partly on a smooth surface of the humerus, but no rotatory movement is possible. There is a recent extensively comminuted fracture of the radius.

The parts were removed by amputation from a man aged 30, whose arm was crushed by a wheel passing over it.—See *Abernethy Ward Book*, vol. vi, p. 7.

RADIUS FORWARDS.

1030. An Elbow-Joint, in which there has been fracture and dislocation. The radius and ulna are broken about two inches below the joint: and their fractured ends, not having united by bone, are connected by new capsules which have formed around them. The head of the radius is dislocated upwards and forwards in front of the humerus. III. 5

1031. The Bones of an Elbow-Joint. The articular surfaces of the humerus and ulna are altered in form; that of the humerus, being narrower, and that of the ulna, deeper than is natural; but there is no appearance of their having been fractured. The radius was found dislocated from the outer condyle, and lying upon the front of the ulna. C. 37

(In Case H.)

1032. The Bones of an Elbow-Joint, exhibiting the effects of dislocation and fracture, which occurred many years before death, and which were followed by long-continued inflammation of the bones. The head of the radius has been dislocated forwards. The shaft of the ulna has been broken a little below the olecranon. The head of the radius, mis-shapen, elongated, and flattened, appears to have rested and moved obliquely across the front and outer part of the lower end of the shaft of the humerus. A cavity is here formed on the humerus, into which the head of the radius fits; and their opposed surfaces are covered by hard, ivory-like, polished, and perforated bone. The fractured surfaces of the ulna, not uniting, have moved freely upon each other, the upper portion resting in a deep pit on the lower. All the bones are enlarged, and the radius and ulna are united by bone abundantly formed between them and upon their surfaces. C. 77

Presented by Dr. Hooper.

(In Case H.)

RADIUS BACKWARDS.

1033. An Elbow-Joint, in which the head of the radius was dislocated backwards. No reduction of the dislocated bone having been effected, it has become extensively united to the side of the ulna. There appears also to have been a fracture of the internal condyle. All the bones are atrophied. III. 13

DISLOCATION OF THE WRIST-JOINT.

CARPUS FORWARDS.

1034. A Wrist-Joint, exhibiting dislocation of the carpus forwards. The radius is arched with a convexity directed posteriorly near its lower end: but there is no appearance of its having been fractured. III. 39

DISLOCATION OF THE DIGITS.

OF THE THUMB.

1035. A portion of the Left Hand of a man who was killed by the fall of an archway. The proximal phalanx of the thumb is dislocated forward on to the anterior surface of the head of the metacarpal bone. The posterior portion of the capsule of the joint is torn across. Reduction was readily effected by extension.

DISLOCATIONS OF THE HIP-JOINT.

BACKWARDS.

1036. Dissection of a recently dislocated left Hip-Joint, which was reduced during life. The gluteus maximus and medius have been removed, the gluteus minimus is partially reflected: neither were injured. The quadratus femoris is cut across, and the pyriformis, gemelli, and obturator internus muscles are reflected outwards; of these, the pyriformis and superior gemellus were slightly lacerated. The obturator internus is extensively lacerated (this is partially due to immersion of the specimen and to traction on the muscle): no other muscles were torn. The posterior part of the rim of the acetabulum, formed by the ischium, is broken off. The ligamentum teres is torn across at its acetabular insertion. The cartilage covering the lower and anterior part of the head of the femur has been irregularly ground off. The torn capsule is seen surrounding the posterior surface of the head of the femur; the rent, which passes along its acetabular attachment, is limited to the portion inserted into the ischial margin of the acetabulum, but does not extend quite as far forward as the cotyloid notch. The ilio-femoral ligament is intact. There were considerable extravasations of blood around the upper part of the femoral vein, between the gluteus medius and minimus, and into the substance of the obturator externus. The head of the femur appears, from the dissection and physical signs, to have been thrown on to the body of the ischium on a level with the lower part of the great ischiatic notch.

From a man, aged 55 years. Whilst at work excavating, a fall of earth took place upon him. He was admitted to the hospital with a sciatic dislocation of the left hip. Reduction was readily effected by traction on the thigh in a position of slight flexion and adduction, the manipulation of flexion and circumduction having failed. Symptoms of peritonitis came on and he died on the following day. The post mortem examination revealed intense general peritonitis occasioned by the rupture of a portion of the intestine, which at the time of the accident lay apparently in the right inguinal canal.—See *Pitcairn Ward Book*, vol. v, p. 377.

There is a drawing of the specimen, No. 57.

1037. A Hip-Joint, in which a dislocation of the Femur occurred a week before death. The capsule has been opened in front to show the head of the femur, which is deprived of many large portions of its cartilage, some of which are seen loosely connected with the neck of the bone. At the back part of the joint is the wide laceration in the capsule which was made by the head of the femur in its dislocation from the acetabulum. It was supposed that the dislocated head of the femur was situated upon the ischium, close to its spine. A

portion of the posterior part of the rim of the acetabulum, in the presumed direction of the dislocation, is separated by fracture. Upon the front part of the joint there is also a detached portion of the rim of the acetabulum connected with the capsule. The surface of this piece of bone is very smooth, and is adapted to a corresponding surface of the ilium immediately below the anterior inferior spine; and above this surface there is a deposit of bone, making it probable that the changes in this part of the joint were the result of some injury previous to the dislocation. III. 68

1038. A Dislocation of the Right Hip. The head of the femur is seen lying on the body of the ischium and ischial margin of the acetabulum, on a level with the lesser ischiatic notch. The sciatic nerve passes over the head of the bone, which is bound down by the obturator internus: the tendon of this muscle passes across the horizontal diameter of the head. The gemellus inferior is torn across; this is the only muscle which is torn or lacerated. The gemellus superior is absent. The whole of that portion of the margin of the acetabulum which is formed by the ischium is broken off and pushed above the head of the femur. The pyriformis muscle is raised up and put on the stretch by this fragment of bone. The rough fractured surface of the ischium is partly covered by the head of the femur and partly exposed to view. The quadratus femoris is reflected, exposing the obturator externus, which tightly embraces the posterior and lower surfaces of the neck of the femur. A small extent of the lower and back part of the capsule is torn across: the upper and back part is intact and attached to the uptorn margin of the acetabulum: the inferior portion covering the cotyloid notch is also untorn. The ilio-femoral ligament and the upper part of the capsule are intact; the former presents an oval opening through which the bursa under the psoas communicated with the joint.

The specimen was taken from a middle-aged man who was brought into the hospital dead. He threw himself out of a window and fractured the base of his skull, besides dislocating his femur. The right leg was somewhat longer than the left: the thigh was adducted and rotated inwards: the knee was slightly flexed and rested on the lower third of the left thigh; the right great toe rested on the ball of the left great toe.

This case, and the case from which specimen No. 1036 were taken, are described by Mr. Eve in the *Medico-Chirurgical Transactions*, vol. lxiii, 1880, p. 51.

There is a drawing of the specimen, No. 58.

1039. A Hip-Joint, exhibiting a direct dislocation of the head of the Femur downwards and backwards, which occurred twelve hours before death. The head of the bone is situated on the ischium, opposite to the lesser ischiatic notch and the upper part of the tuberosity. The tendon of the obturator internus is torn from its muscular fibres; some of the fibres of the pyriformis, gemelli, and gluteus minimus are also torn. The inferior portion of the capsule is intact. A fracture passes through the junction of the pubis with the ilium, the anterior margin of the acetabulum and the ischium in front of the tuberosity. From the situation of the rent in the capsule, it is evident that the dislocation occurred directly backwards, below the tendon of the obturator internus. III. 56

The patient was a maniac, who leaped from a third story window. He died of other injuries received at the same time. The case is published by Mr. Wormald in the *London Medical Gazette*, vol. xix, p. 657. London, 1837.

1040. A Hip-Joint, in which a dislocation of the head of the Femur upon the ischiatic notch occurred about three weeks before death. The ligamentum teres has been torn across its middle; no union of it has taken place. The cartilage covering the head of the bone is in part absorbed. The opening in the capsule through which the head of the bone escaped was situated at the posterior part of the joint. Slight union had taken place about the middle of the rent. The

dislocation has been reproduced. A large portion of bone comprising the posterior third of the acetabulum is raised above the head: it is attached to the upper part of the capsule. III. 20

1041. Section of the head and neck of a Femur, with the Os Innominatum of a man in whom dislocation of the femur and fracture of the acetabulum occurred fifty years before death. The dislocation was reduced; but, soon after, the head of the bone again escaped from the acetabulum, and was not again reduced. The head and neck of the femur are altered in form, being shortened, flattened, and much increased in their vertical diameter; and the cancellous tissue of a thick layer of the head of the femur is consolidated and hard. A new and deep osseous cavity, with very thick walls, projects from the os innominatum, as if growing out from the original acetabulum, and incloses the head and a part of the neck of the femur. The wall of bone by which this cavity is separated from that of the pelvis, and which includes the former floor of the acetabulum, is an inch and a quarter in thickness, and is chiefly formed, like the rest of the walls of the cavity, of hard compact new bone. The surface of the cavity and that of the head of the femur are covered and partially connected by fibrous tissue: they have no articular cartilage. The obturator internus muscle and sciatic nerve are seen in their natural situations, but are flattened in consequence of the altered form and enlargement of the surrounding parts. III. 100

The patient was 18 years old at the time of the dislocation. His limb was a little shortened, but he had good use of it.

1042. The other half of the Hip-Joint described above, after maceration. III. 101

Presented by Thomas Wormald, Esq.

DOWNWARDS INTO THE OBTURATOR FORAMEN.

1043. A Hip-Joint, exhibiting a recent dislocation of the head of the Femur on to the lower edge of the obturator externus muscle. The ligamentum teres is torn from its attachment to the head of the femur. The capsule is extensively lacerated at the anterior and lower part of the joint. The obturator externus muscle is lacerated where the femur rests partly on it, and partly on the subjacent obturator ligament. III. 25

FORWARDS AND UPWARDS.

1044. A Hip-Joint, exhibiting an infra-spinous dislocation of the Femur which occurred many years before death. The head of the femur has been thrown upwards and forwards, and is lodged in a cavity on the outer surface of the anterior inferior spine: this cavity is formed partly by new bone, and partly by the displaced cotyloid ligament. The ligamentum teres is flattened and elongated, but it retains its natural connections; bristles are passed beneath the two portions of this ligament, which are attached to the margin of the original acetabulum. The lower part of the head of the femur is irregularly absorbed. III. 43

The patient was 40 years old. When he was about 14 years old, he fell from a ladder and injured his hip. He had great pain at the time of the accident, and for many months much difficulty in walking; but he recovered, and was in an active walking occupation till his last illness. The case is recorded by Mr. Wormald, in the *London Medical Gazette*, vol. xix. p. 658. London, 1837.

1045. The left Hip-Joint of a man aged 46, showing an infra-spinous dislocation. The head of the femur has left the acetabulum, and is lodged beneath the anterior inferior iliac spine, the great trochanter pointing directly backwards. The tendon of the psoas muscle winds round the outer aspect of the head to reach the lesser trochanter. The iliacus muscle is stretched over the inner

portion of the head, and between the two muscles lies the anterior crural nerve. The femoral vessels lie to the inner side of the head of the bone.

The hip had been injured by a fall from a haystack four years previously. Symptoms of disease of the hip appeared two years subsequently. He was confined to bed for some weeks before death occurred.

REPARATIVE CHANGES AFTER REDUCTION.

1046. A left Hip-Joint; also the head of the Femur, and part of the acetabulum from the opposite joint, taken from a man who sustained a dislocation of the femur on the dorsum of the ilium, three years before death. The dislocation was soon reduced, and the only traces of its effects which remain are, that there is a strong band or collar of ligamentous tissue around the base of the neck of the femur at its upper part, and that a slip of the ligamentum teres is attached to the notch of the acetabulum, external to the cotyloid ligament. But with this exception, the ligamentum teres presents no sign of having been torn. III. 102

The following specimens of Dislocation are presumed to have been due to elongation of the capsule, but were possibly in some instances congenital.

1047. A Hip-Joint, exhibiting elongation of the capsule and of the ligamentum teres. The ligamentum teres has separated through its whole length into three cords. The internal surface of the capsule is beset by small pedunculated filamentous growths. The elongation of the capsule has allowed the head of the femur to pass to a considerable distance from the acetabulum, which is contracted to a small triangular cavity. II. 54

An engraving of the specimen is published, with a paper by Mr. Stanley, "On Dislocations accompanied by Elongation of the Ligaments," in the *Medico-Chirurgical Transactions*, vol. xxiv, Pl. IV, fig. 2. London, 1841.

Presented by W. J. Ward, Esq.

1048. A Hip-Joint, exhibiting dislocation of the head of the Femur with elongation of the capsule. The capsule is entire, and measures, now that it is laid open, between four and five inches in length. The cavity of the acetabulum has almost disappeared, being both reduced in size and filled by fibrous tissue. The ligamentum teres is absent, and the head of the femur is small, and its articular surface irregular. The capsule around the neck of the femur presents a fringe of slender growths. III. 24

This specimen and the preceding closely resemble No. 1050.

The specimen is figured in the *Medico-Chirurgical Transactions*, vol. xxiv, Pl. IV, fig. 1, London, 1841: in illustration of a paper by Mr. Stanley, "On Dislocations, accompanied by Elongations of the Ligaments."

1049. A Hip-Joint, exhibiting dislocation of the head of the Femur on the dorsum of the ilium, which occurred a considerable time before death. On one side of the preparation is a part of the original capsule; this has been extensively divided in front, to show the acetabulum, which is contracted into a narrow triangular cavity nearly filled by fibrous tissue. On the other side of the preparation, the head of the bone is shown, deformed, reduced in size, and surrounded by a thick membrane of tough fibrous tissue, which is smooth on its internal surface. This membrane, forming the capsule of the new joint, is in part newly formed, and in part consists of the remains of the former capsule: it is extensively divided behind, to give a distinct view of the head of the bone. The cavity of the new capsule communicates with that of the old capsule below the neck of the femur, and their smooth internal linings are continuous. III. 31

CONGENITAL DISLOCATION.

1050. The Pelvis and Femora of an adult female. The head of each femur is dislocated upon the dorsum of the ilium. Portions of the capsules of the hip-joints remain, but there is no vestige of either ligamentum teres. There has been absorption of the surface of the head of each femur, diminishing its size, and giving it an irregular conical form. On the dorsum of each ilium there is an oblong roughened patch, produced by friction of the heads of the thigh-bones in walking. The acetabula are represented by two small triangular cavities. There is considerable lordosis of the spine. B. 48

The dislocations were probably congenital, but the history of the case is not known. (In Case H.)

DISLOCATION OF THE PATELLA.

OUTWARDS.

1051. A Knee-Joint, of which the patella was dislocated outwards long before death, and was not reduced. The patella rests on the outer surface of the external condyle of the femur, on which, in adaptation to it, a small articular surface has been formed by a layer of very dense and polished ligamentous tissue. The tendon of the quadriceps femoris lies on the outer side of the femur, and the ligamentum patellæ is directed slightly inwards as well as downwards towards the tibia, which has been rotated outwards, following the displacement of the patella. All the articular cartilages have been more or less deeply removed: the surfaces of the bones are in several places exposed, hard, and polished, and their margins are nodulated. III. 111

A cast of the specimen is preserved, No. 49.

DISLOCATIONS OF THE ASTRAGALUS.

1052. An Astragalus, which had been dislocated forwards, upwards, and a little outwards, with compound fracture of the external malleolus, and displacement of the foot inwards. It was excised on the tenth day after the accident. III. 131

The limb was proceeding favourably, the wound being nearly closed, when the patient, aged 61, died of delirium tremens on the thirtieth day.

1053. A Dislocated Astragalus, which was removed by operation ten days after the accident. III. 121

The astragalus was dislocated forwards and outwards from the tibia, and its connections with the tarsus were also severed: the foot was displaced inwards. There was no fracture of the fibula. The dislocation, which was a compound one, was reduced; but extensive suppuration followed, and the astragalus, becoming again displaced, and presenting itself at an external wound, was removed. Subsequently, a considerable portion of the ligaments connected with it sloughed; but, a month after the injury, the case was making favourable progress.

Vide No. 1010, Series III.

DISLOCATIONS OF THE DIGITS.

1054. The first and second Phalanges of a Great Toe. The second phalanx is dislocated, and firmly united by bone to the upper surface of the first phalanx. III. 61

1055. The Bones of a Great Toe. The second phalanx, dislocated on the upper surface of the first phalanx, has there become firmly fixed by bone. III. 57

SEPARATION OF SYMPHYSES, &c.

1056. A Pelvis and the lower portion of a Femur, from a boy 14 years old. External violence has produced separation of both the sacro-iliac symphyses and the symphysis pubis. C. 42

(In Case H.)

1057. Section of a Sternum, exhibiting a separation between its first and second bones. The two bones overlap considerably, the first projecting in front of the second. The contiguous periosteal surfaces are firmly united. There is also a deposit of osseous substance upon the anterior surface of the second bone immediately below the projecting end of the first. III. 64

The dislocation occurred five months before death, in an elderly man who fell from a tree. He died with cancer of the œsophagus. The other half of the sternum and the œsophagus are in the Museum of the Royal College of Surgeons of England.

Presented by Joseph Swan, Esq.

1058. The upper portion of a Sternum. The manubrium is separated from the gladiolus and displaced backwards, the extremity of the latter projecting forwards.

The injury was caused by the fall of a bale of linen from a height of forty feet upon the head and shoulders of a man. He also sustained a fracture of the spine in the upper dorsal region, which caused his death ten days after the accident.—See *Abernethy Ward Book*, vol. vi, p. 229.

SERIES V.

DISEASES AND DEFORMITIES OF THE SPINE.

CARIES (ULCERATION) OF THE VERTEBRÆ.

1059. Portion of a Spine, exhibiting ulceration of the posterior surfaces of the bodies of the cervical vertebræ, from the second to the fifth, and more superficial ulceration of their anterior surfaces, with deposits of new bone. IV. 24

1060. Portion of a Spine, exhibiting ulceration of the arches of the vertebræ. The left halves of the arches of the fifth, sixth, and seventh cervical vertebræ are almost completely destroyed. A portion of the ulcerated bone became separated, and pressed upon the spinal cord. The remaining portions of the bones are of their natural texture. IV. 22

1061. Section of a Child's Spine, from the second cervical to the third dorsal vertebra. The whole of the body of the fifth and part of that of the sixth vertebra are, together with the intervening fibro-cartilage, destroyed by ulceration. The body of the fourth, and the remains of that of the sixth vertebra, are solidified, hard, and yellow. A collection of purulent fluid existed between the diseased vertebræ and their periosteum, both in front of the bodies and behind them, and part of it was discharged by ulceration into the spinal canal. IV. 42

1062. Section of a Spine, in which the adjacent parts of the bodies of two dorsal vertebræ are infiltrated with inflammatory materials, and deeply ulcerated. A portion of the diseased bone has been separated and protruded forwards. The intervertebral substance between the two diseased vertebræ is completely absorbed. An abscess has formed by the side of the diseased portion of the spine, but it has no communication with the ulcerated bone. IV. 21

1063. Section of a Spine, including four lower dorsal Vertebræ. The intervertebral substance and the adjacent parts of the bodies of two of the vertebræ are destroyed by ulceration, and the bone bordering the ulcerated surfaces is consolidated and hard. Between two other vertebræ a circumscribed cavity is formed, like that of a small abscess, by the removal of the central part of the intervertebral substance, and of adjacent portions of the bodies of the vertebræ. Again, between two others, a small cavity is formed by the removal of a portion of the intervertebral substance, and of the surface of one vertebra. It may be assumed that in this case disease commenced in the intervertebral substance, and from thence extended to the substance of the vertebræ; thence also it has extended to their anterior surfaces, which are extensively ulcerated, with separation of their periosteum. IV. 45

1064. Section of a Spine from the fifth dorsal to the second lumbar vertebra, exhibiting the effects of tubercular disease in the bodies of the vertebræ. In the body of nearly every vertebra there are one or more small, spherical, and exactly circumscribed cavities, which were filled with pus, or with a mixture of pus and tubercular matter. The cavities measure from one-eighth to one-half of an inch in diameter, and are nearly all lined with a thin layer of false membrane; the bone around them is healthy, or in some parts slightly consolidated. The ligament between the bodies of the tenth and eleventh dorsal vertebræ is softened and in great part removed, as if by ulceration. The adjoining parts of the bodies of the same vertebræ are also ulcerated, and by the approximation of their anterior borders have produced a slight angular curvature of the spine: the parts of these vertebræ adjacent to the ulceration are solid, hard, and yellow. Most of the vertebræ also are ulcerated on their anterior surfaces, and their periosteum is raised from these parts by the collection of purulent matter beneath it. IV. 43

1065. Part of the other section of the same Spine after maceration. It shows more clearly the generally light and dry texture of the vertebræ, and the consolidation of a very thin layer of the cancellous tissue around the cavities. Here, also, many cavities are shown at and near the exterior of the vertebræ. IV. 44

The patient was a labourer, 26 years old. Weakness and pain in the back had disabled him from work for eight months. Slight angular curvature of the spine existed in its lower dorsal region, and here it was painful on pressure, and during movements of the body. No paralysis existed. Through exposure to cold, acute pleuro-pneumonia ensued while he was under treatment, and proved quickly fatal.

1066. Section of a Spine, exhibiting rarefactive ostitis of the bodies of three lumbar vertebræ, with caries of the posterior part of the body of the lower. All the other vertebræ of this spine were similarly altered. IV. 18

1067. Section of a Spine, in which the bodies of two of the lower dorsal vertebræ are nearly destroyed by ulceration. Their remains are soft and crumbling, and the intervertebral substance is removed. There is a deposit of caseous matter around the diseased bone, elevating the periosteum of the bodies of the vertebræ and the pleura costalis to a considerable extent above and below the chief seat of the disease. IV. 16

1068. Five Dorsal Vertebræ, exhibiting superficial ulceration on the anterior surfaces of their bodies: the ulceration was connected with psoas abscess. A. 80

(In Case C.)

1069. Portion of a Spine, in which the bodies of the eleventh and twelfth dorsal vertebræ are almost completely destroyed by ulceration. The anterior surface of the bodies of three contiguous vertebræ is also carious. The diseased bone is rough and uneven, but retains its natural hardness. There is no angular curvature. D. 14

(In Case C.)

1070. Portion of a Spine, exhibiting Caries with abscess in the cancellous texture of the body of one of the vertebræ. There is a considerable deposit of new bone upon the vertebræ around the diseased bone. Between two of the bodies the fibro-cartilage has been removed, and they are united by bone. A. 115

(In Case C.)

Vide Nos. 1094, 1095, 1097, 1098, 1100, 1101, 1105, 1110, 1113.

DESTRUCTION OF THE INTERVERTEBRAL LIGAMENTS.

1071. The dorsal and lumbar portions of a Spine, from a young person, exhibiting a nearly complete destruction of the intervertebral ligaments in the whole extent of the column, with ulceration of the bodies of the vertebræ. The bodies of several of the lumbar vertebræ are completely destroyed, and an angle is here formed by the approximation of the upper and lower parts of the column and the projection of the spinous processes. In the dorsal vertebræ the ulceration is superficial, though the intervertebral ligaments are very deeply destroyed. The bone in progress of ulceration is not softened or otherwise changed in its apparent texture. IV. 31

1072. Section of a Spine, exhibiting Caries of the articulation between two of the lower dorsal vertebræ. The intervertebral substance is completely destroyed. IV. 20

Vide No. 1063.

OSSEOUS ANCHYLOSIS OF, AND FORMATION OF NEW BONE ON, THE VERTEBRÆ.

1073. Portion of an Occipital Bone, with the Atlas. The atlas is united to the occipital bone by new bone formed abundantly around their articulations. The atlas is also displaced towards the left side, and its right half projecting within the foramen magnum considerably diminishes the size of the aperture. IV. 27

1074. Portion of an Occipital Bone, with the first and second Cervical Vertebræ. There is a nearly complete osseous union of the two vertebræ, and the odontoid process appears to have been superficially ulcerated. The anterior arch of the atlas exhibits a line of fracture; but it does not appear probable that the anchylosis of the vertebræ was the consequence of the fracture. IV. 33

1075. Portion of an Occipital Bone, with the three uppermost Cervical Vertebræ. The occipital bone and the anterior half of the atlas are firmly and completely united by bone. The second and third vertebræ are similarly anchylosed at their articular processes. These changes seem to have followed ulcerative disease, by which the odontoid process and the body of the second vertebra were changed in structure, and in part removed. IV. 26

1076. The base of a Skull, with the first Cervical Vertebra. The vertebra, displaced forwards and to the left side, is in every part, except the right half of its posterior arch, united to the occipital bone. Its projection within the foramen magnum has considerably diminished the size of that aperture. D. 7

(In Case C.)

1077. Second and third Cervical Vertebræ, firmly united by bone which has been, chiefly, formed around their articulations. Part of the odontoid process has been destroyed by ulceration. IV. 28

1078. Second and third Cervical Vertebræ, exhibiting a complete bony union of their bodies, articular surfaces, and spinous processes, without any displacement or change of structure. IV. 29

1079. A similar specimen. IV. 30

1080. The Cervical portion of a Spine, in which the second, third, fourth, and fifth vertebræ are united by bone. The bone uniting them forms a broad smooth layer covering the front surface of their bodies. Similar formations of bone are seen upon the front surfaces and margins of the sixth and seventh vertebræ, and these show that the union of each two adjacent vertebræ is effected by the growths of bone from their adjacent margins extending over

the front of the intervertebral substance, and then coalescing; for in these vertebræ the growths from their several margins have met and are adapted, but not united, to each other. IV. 32

1081. Portion of a Spine, exhibiting ulceration, with deposit of new bone, upon the anterior surfaces of the bodies of the lower lumbar vertebræ. IV. 25

1082. Sections of two Lumbar Vertebræ, in the body of one of which is an irregular circumscribed cavity, formerly the seat of abscess, or possibly, of necrosis. The cavity opens anteriorly, through the body of the vertebra, and posteriorly by a wide aperture into the spinal canal. In the neighbourhood of the cavity the adjacent surfaces of the vertebræ are thickened, indurated, and in part united by hard new bone. New bone is also abundantly formed on the anterior surfaces of their bodies. D. 10

(In Case C.)
Vide Nos. 1102, 1103.

1083. A Sacrum and Coccyx, firmly united by bone. The coccyx deviates considerably to the left side. D. 8

(In Case C.)

1084. Part of the Spine of a Horse, in which the bodies of two lumbar vertebræ are united by a strong thick arch of bone, extending like a bridge over the side and front of the intervertebral space. The portion of the intervertebral ligament beneath the bridge is absent; but there is no appearance of injury or disease of the adjacent bones. D. 6

Several years before death, the horse received a severe injury to the back.
Presented by R. S. Wells, Esq.

(In Case C.)

1085. Portion of a Spine in the dorso-lumbar region, in which there is an irregular formation of bone along the margins of some of the vertebræ, forming a lip-like projection.

From a man aged 35 years, whose left knee-joint was excised for rheumatoïd-arthritis. The articulation is preserved in specimen, Series II, No. 693.

1086. Portion of a Spine in the dorsal region, where there was a slight lateral curvature. There is a formation of bone springing from the margins of the vertebræ on the right side and bridging over the intervertebral cartilage. Two of the vertebræ on the left side of the bodies show the commencement of the same formation.

From a middle-aged man. His ribs were beaded; there was no evidence of rheumatoïd disease on superficial examination of the other joints. Only the portion of the spine preserved was affected.
Vide also Nos. 1120, 1121, 1125, 1128.

1087. Part of a Spine, with portions of the Ribs. The bodies of nearly all the vertebræ are united by layers of bone deposited on their anterior surfaces, and projecting with smooth round surfaces in front of the intervertebral spaces. Five of the ribs are similarly united, by their heads and tubercles, to the bodies and transverse processes of the vertebræ. The articular processes are also firmly anchylosed. D. 33

(In Case C.)

1088. Three Dorsal Vertebræ, united by bridge-like portions of bone extending between the anterior and lateral surfaces of their bodies, and forming considerable projections, like exostoses, in front of the intervertebral spaces. D. 12

(In Case C.)

1089. Four lower Dorsal Vertebræ, and three Ribs. They are all united by smooth layers of bone extending, like bridges, over the anterior and lateral surfaces of the bodies of the vertebræ, and thence laterally over the heads of the ribs. Some of the articular processes are similarly united. D. 9

(In Case C.)

1090. A Sacrum and the fifth Lumbar Vertebra. Their articular processes are united by layers of bone, extended over their anterior surfaces. There is slight "lipping" of the upper margin of the body of the last lumbar vertebra. D. 31

(In Case C.)

1091. A Sacrum, with the fifth Lumbar Vertebra. Their corresponding articular processes on the left side are united by bone. There is also a projecting formation of bone along the upper margin of the first sacral vertebra, and the articular surface of the right superior articular process of the last lumbar vertebra is eburnated and worm-eaten, as in rheumatic disease of other joints. The canal of the sacrum is open posteriorly in its whole extent. D. 35

(In Case C.)

DISPLACEMENTS AND DEFORMITIES OF THE SPINE.

DISPLACEMENTS DUE TO DISEASE.

1092. Section of the upper part of the Spine, of the Occipital Bone, and of the Spinal Cord. The connections of the second cervical vertebra, with the first, and with the occipital bone, having been destroyed, apparently by ulceration, the anterior portion of the first vertebra, and the basilar portion of the occipital bone have sunk down, so that the lower margin of the first vertebra is within a line of the upper margin of the intervertebral substance between the second and the third; and the whole of the odontoid process of the second projects straight upwards into the cavity of the skull. The medulla oblongata is thus lifted up and stretched over the apex of the odontoid process; and, as the pons holds its connection with the basilar portion of the occipital bone, the axis of the medulla oblongata forms a right angle with the axis of the spinal cord. The displaced bones are held together by the thickened and consolidated adjacent tissues. Their texture appears indurated, but not otherwise diseased. IV. 38

The patient was a woman 32 years old. The most prominent sign of the disease, which was of four years' duration, was a constant acute pain at the back of the neck, just below the occiput. She had some difficulty of swallowing, and used to sit with her chin on her hand, or resting on her sternum. But she suffered no loss of sensation, and was able to walk on the day before her death. Some of the dorsal vertebræ were also affected with caries.

Presented by John Avery, Esq.

1093. The Upper portion of the Cervical Spine. The atlas is displaced forwards and to the left side, and is firmly anchylosed to the axis. By the displacement of the atlas the spinal canal is much narrowed and converted into an elongated fissure. The odontoid process and body of the axis have been partially destroyed. IV. 38A

The displacement was probably the result of carious disease. The history of the case is not known.

1094. Portion of a Spine, showing caries of the bodies of the second and third cervical vertebræ. The remaining bone is softened and yellow. The odontoid process has been completely separated at its base from the body of the second vertebra. IV. 19

Vide Nos. 1074, 1075.

ANGULAR CURVATURE.

1095. The upper half of a Spine, in which the bodies of the fifth and sixth cervical vertebræ are completely, and those of the fourth and seventh partially, destroyed by ulceration. The intervertebral fibro-cartilages between these vertebræ, as well as those between the first four dorsal vertebræ, are completely destroyed, and the bodies of the dorsal vertebræ are superficially ulcerated. There is an angular curvature in the lower part of the cervical region, and the remains of one of the bodies of the vertebræ project far into the spinal canal. IV. 34

From a child 10 years old. There was a large collection of matter in front of the spine pressing the pleuræ inwards.

Presented by J. G. Perry, Esq.

1096. Section of a Spine, exhibiting the process of reparation after extensive disease. Twelve spinous processes are shown in the preparation, but the bodies of only four vertebræ; eight bodies, therefore, have been destroyed. The vertebræ above and below these eight have been approximated, and are firmly united by bone with their remains and with one another. An extremely acute angular curvature is thus produced, but the spinal cord having adapted itself to the alteration in the direction of the spinal canal, has not been compressed. IV. 23

1097. Section of a Spine, with Angular Curvature. The disease is situated in the middle of the dorsal region; large portions of the bodies of two vertebræ have been destroyed by caries. A soft caseous matter is deposited around the diseased bone, and is so abundant in front and at the side of the spine, that it elevates the periosteum of the vertebræ and the pleura costalis in the form of a tumour within the chest. A small piece of bone is separated from the rest by necrosis, and is imbedded in the caseous matter behind the carious vertebræ. The spinal cord for the space of an inch and a half, is compressed in the situation of the curvature. IV. 14

The patient was under the care of Mr. Pott, and had paraplegia and other signs of "Pott's disease" of the spine and spinal cord. It was one of the first cases which showed the benefit of issues in the treatment of the disease; for under their influence the paraplegia and other symptoms were completely removed, and the patient recovered so as to walk with ease. He died with phthisis.

1098. Part of the dorsal portion of a Spine. The anterior half of the body of the seventh dorsal vertebra is almost entirely destroyed by ulceration, and the body of the sixth is deeply ulcerated on its anterior surface. By the approximation and union of the sixth and eighth vertebræ, an angular curvature of the spine has been produced. A small rough process of bone has grown from the most prominent part of the angle into the spinal canal. Opposite to this projection the spinal cord was softened and reduced in size —*See* Series XXXI, No. 2544. IV. 35

1099. Portion of the Spine of a Child, exhibiting the process of cure after caries. The bodies of four of the lower dorsal vertebræ are completely destroyed; and the anterior parts of the bodies of the vertebræ which were immediately above and below the situation of the disease, are approximated and firmly united by bone. Together with the angular curvature thus produced, there is some lateral displacement of the bodies of the vertebræ; but, by the separation of the arches of the diseased vertebræ, the spinal canal, though changed in form, appears to have retained its natural size. IV. 17

1100. Section of a Spine, exhibiting disease in three of the bodies of the lower dorsal vertebræ, which was in progress towards its cure. A large portion of the anterior and lower half of the body of one vertebra has been destroyed by caries. The intervertebral substances above and below it have also been removed.

The adjacent vertebræ are approximated, so that their anterior margins are nearly in contact and partially united by bone, and there is considerable angular curvature of the spine. The remains of the body of the vertebra which is principally diseased, and the bodies of the vertebræ above and below it, are denser and harder than natural, and of a yellow colour. The spinal cord is curved, in correspondence with the curvature of the spine, but is not compressed. IV. 15

The patient was a lad 17 years old. After signs of the disease had existed for two years he had paraplegia. Issues were made near the diseased part of the spine, and he recovered sufficiently to pursue his work as a farmer's boy. But, by a fall on his back, acute inflammation of the spinal cord, apparently extending to the brain, was excited, which proved fatal.

1101. The last nine dorsal, and the first lumbar Vertebræ of a Child. The body of the eleventh dorsal vertebra is nearly destroyed, and those of the eighth, ninth, and tenth are completely destroyed by ulceration. The space left by their removal is partially closed by the approximation of the vertebræ above and below, producing an acute angular curvature of the spine; it is bounded in front by the periosteum and ligaments of the vertebræ detached and raised up over a collection of purulent fluid. The detachment of the periosteum is also continued over the fronts of the bodies of the seventh, sixth, and fifth dorsal vertebræ, which are hollowed out, except at their borders, by ulceration; the intervertebral substances are not diseased. The posterior common vertebral ligament is raised and made to project into the spinal canal by purulent and probably tuberculous matter collected behind the remains of the ulcerated vertebræ. IV. 40

1102. Section of the lower dorsal and first two lumbar Vertebræ. The former, the seat of old disease, have their bodies broken down and crushed together. In this condition they have become consolidated. The spinal canal at, and above the curve, is slightly narrowed. The cord is here compressed, its antero-posterior diameter being less by nearly one-fifth of an inch than immediately above and below. IV. 48

The angular curvature was of slow formation. It occurred between the ages of 8 and 11 years, about 14 years prior to the death of the patient. There was no paralysis. Pneumonia was the immediate cause of death.

1103. Section of a part of a Spine, including the last six dorsal and the first three lumbar vertebræ. In consequence of disease—probably such ulceration as is shown in the preceding specimen—there has been a considerable loss of substance in the bodies of the last three dorsal vertebræ, and their remains have united at a very acute angle. The osseous substance in this situation is hard and dense. The intervertebral cartilage between the eleventh and twelfth dorsal vertebræ is wholly removed, and that between the first and second lumbar vertebræ has yielded, so as to leave a deep gap between the bodies of those bones. The vertebral canal behind the angular curvature is not narrowed, nor is the spinal cord in any degree compressed, though drawn close over the angle in the front wall of the canal. IV. 36

From a lad, who died with lumbar abscess.

1104. Section of a Spine, from the sixth dorsal to the second lumbar vertebra. The anterior parts of the bodies of the ninth and tenth dorsal vertebræ, and the portion of the fibro-cartilage between them are destroyed by ulceration; the approximation of their remains has produced an angular curvature of the spine. The periosteum, with the anterior vertebral ligament, is detached both from these two and from the eighth and eleventh dorsal vertebræ; it was raised over a collection of purulent fluid, which projected in the posterior mediastinum, and communicated below with a psoas abscess. The spinal canal is much

narrowed by the projection of the adjoining posterior borders of the bodies of the ninth and tenth vertebræ. IV. 41

1105. Portion of a Spine, in which the bodies of two dorsal vertebræ are completely destroyed by ulceration, and those of two others were in progress of removal. D. 13

(In Case C.)

1106. The Dorsal portion of a Spine, with an acute angular curvature in consequence of destruction of the bodies of five vertebræ. Together with the angular curvature, there is also lateral displacement, the superior vertebræ being united to the left of the inferior. The aorta, upon the altered part of the spine, forms two very acute angles; the first, where it turns to the right, in adaptation to the lateral displacement; the second, where it resumes its downward course. D. 27

(In Case C.)

1107. The Dorsal portion of a Spine, with acute angular curvature, in consequence of destruction of the bodies of three vertebræ. The aorta, upon the altered part of the spine, forms a very acute angle, which is directed backwards, in correspondence with the angle of the spine itself. D. 28

(In Case C.)

1108. Portion of a Spine, in which the bodies of four of the lower Dorsal Vertebræ have been removed by ulceration. The ordinary process of cure has taken place, the vertebræ above and below the seat of the disease approximating and uniting. But, together with the angular curvature thus produced, there is a lateral deviation of the axis of the spine, the lumbar vertebræ being placed to the left of the lower dorsal. The spinous processes are removed, to show that, notwithstanding the angle of bone projecting into the vertebral canal, the space for the spinal cord is here greater than either above or below. D. 36

(In Case C.)

1109. A Spine, with a very acute angular curvature, in consequence of the destruction of the bodies of the lower six Dorsal Vertebræ. The vertebræ above and below the seat of disease have been firmly united with the remains of the bodies of those that were ulcerated, and with one another. D. 29

(In Case C.)

1110. Section of a Spine, in which there has been destruction by ulceration of the bodies of six of the dorsal and lumbar vertebræ. The vertebræ above and below the seat of the disease have been approximated and firmly united by bone. There is an acute angular curvature of the spine, but the diameter of the canal which contained the spinal cord is not lessened; rather, by the extensive destruction of the bodies of the vertebræ, it is increased where the angle is most prominent. D. 11

(In Case C.)

1111. The Skeleton of a Woman. There is a well-marked angular curvature in the dorso-lumbar region. The anterior portion of the bodies of the eleventh and twelfth dorsal vertebræ is absorbed, so as to render the bones wedge-shaped; the surfaces of these and the adjoining vertebræ are covered by irregular projections of bone. With the angular curvature there is a slight lateral inclination to the right, and a slight compensatory curve to the left in the cervico-dorsal region. The long bones, with the exception of the bones of the forearms, are not curved, yet have the appearance of bones which had been affected with rickets. They are short, the articular ends are large and flattened,

and the muscular ridges are well marked. The pelvis is slightly compressed antero-posteriorly.

(In Case A.)

1112. A Spine and Pelvis. The spine presents an acute angular curvature in its dorsal region, the consequence of the destruction by ulceration of the bodies of the last nine dorsal and the first lumbar vertebræ. Two of the ribs are united by bone to the spine. The pelvis is well formed. D. 34

(In Case C.)

1113. A Spine, Thorax, and Pelvis. There has been ulceration of the bodies of the lumbar vertebræ, and of the sacrum in its whole extent. Four of the bodies of the lumbar vertebræ are destroyed, and an angle is formed by the approximation of the vertebræ above and below the situation of the disease; their union by bone is incomplete. The thorax is depressed anteriorly, so that a space of only two inches and a half intervenes between the ensiform cartilage and the ossa pubis, and the false ribs nearly touch the crests of the ilia. All the ribs arch upwards, and the sternum arches forwards. D. 30

(In Case C.)

For other Specimens, see Nos. 1064 *and* 1071.

LATERAL CURVATURE.

1114. A Spine, Thorax, and Pelvis, from an adult woman. All the dorsal and the first two lumbar vertebræ are comprised in a lateral curve, the convexity of which is directed to the right, and backwards. There are slight compensating curves in the cervical and lower lumbar regions of the spine. The bodies of the vertebræ and intervertebral spaces are much deeper in the convexity than in the concavity of the curve; they are also twisted round, so that what were their anterior surfaces are directed outwards, towards the convexity of the curve; this outward direction being chiefly observed in those vertebræ which are in the middle of the curve, while those at each end of it gradually approach nearer to their natural direction. The thorax projects obliquely forward, and to the left, and its sides are flattened. The posterior portions of the right ribs are directed downwards, lying nearly in contact with the vertebræ; and then, bending abruptly round the vertebræ, the ribs are directed forwards and to the left, with narrow intercostal spaces. The left ribs, crowded together in the concavity of the curve, are directed almost horizontally, first outwards, and then straight forwards; only their extreme ends and their cartilages being directed inwards to the sternum. The sternum and anterior walls of the thorax are arched as much as the lateral walls are in their natural state, while the lateral walls are as flat as the anterior should be. The cavity of the pelvis is of ordinary size, but its antero-posterior axis, in correspondence with the obliquity of the lumbar vertebræ, is directed obliquely, from before backwards, and from right to left. D. 16

(In Case C.)

1115. A Spine, Thorax, and Pelvis. The middle of the dorsal region of the spine is strongly curved towards the left and backwards, and there are compensating curves to the right and forwards above and below this. The description of the preceding specimen will almost exactly apply to this specimen, except that in this the principal curve is directed to the left, in that, to the right; and that in this specimen the thorax is less flattened at its sides. D. 25

(In Case C.)

1116. Skeleton of an aged woman, in which, with curvatures of the spine and an altered form of the chest, there is atrophy of the bones in the right lower limb. The spine has suffered three distinct curves, one to the left in the loins, a second to the right implicating the lower dorsal vertebræ, and the third to the

left, extending from the middle of the back to the neck. The ribs are distorted in adaptation to the curvatures of the spine. The cavity of the chest is altered in its form and dimensions: its antero-posterior axis is direct, but its sides are flattened. The pelvis is well formed, but slightly oblique. The bones of the right lower limb are considerably smaller in all their dimensions than those of the opposite limb; in partial compensation for their shortness, the posterior part of the os calcis is elongated, and pointed almost straight downwards. A. 152

(In Case A.)

1117. The Spine and Pelvis of a young person. The spine exhibits three slight lateral curves; the first, in the superior dorsal region, is directed to the left; the second, in the middle dorsal region, to the right; and the third, in the inferior dorsal and superior lumbar region, to the left again. The pelvis is remarkably deformed. The internal surfaces of the ilia are unnaturally concave, and their crests are incurved. The ischia are approximated, so that their spines are only an inch and a quarter, and their tuberosities only half an inch, apart: their ascending rami are directed almost vertically and parallel to each other, with a distance of from half to three quarters of an inch between them: they are also bent and project in front of the symphysis pubis. The lower part of the sacrum is abruptly turned forwards, in a horizontal plane. While the inferior aperature of the pelvis is thus narrowed, the superior is of nearly natural dimensions. A section of one of the ilia shows that its texture is light, spongy, and soft. These changes were probably the result of mollities ossium. D. 19

(In Case C.)

1118. A Spine and Sacrum. The spine presents two lateral curves; one in the dorsal region directed to the right, the other in the inferior dorsal and lumbar region directed to the left. The changes in the form and direction of the vertebræ are similar to those shown in No. 1115, but less in degree. D. 21

(In Case C.)

1119. A Spine and Pelvis. The spine presents two lateral curves, like those in the preceding specimen. The pelvis is slightly oblique. D. 22

(In Case C.)

1120. A Spine, with portions of the Ribs. The spine presents slight lateral curves in its dorsal region; the superior curve is directed to the right, the inferior to the left, and they exactly compensate each other, so that the lumbar and cervical portions of the spine lie in the same vertical plane. D. 23

(In Case C.)

1121. A Spine, with two lateral curves in its dorsal region, and one in the lumbar. The principal curve is in the superior dorsal region, and is directed to the right side. The bodies of the vertebræ are thinner on the concave than on the convex side of each curve, and there are thin growths of bone from their edges overlapping the thinner invertebral fibro-cartilages in each of the concavities of the curves. D. 32

(In Case C.)

Presented by Thomas Wormald, Esq.

1122. A Spine and Pelvis, similar to those in No. 1115. There is considerable deposit of bone enlarging and surrounding the articular processes of those vertebræ which are comprised in the concavity of the curve; a change which may also be observed, in various degrees, in many of the other specimens of lateral curvature. D. 24

(In Case C.)

1123. A Spine, with portions of the Ribs. The spine presents three lateral

curves, of which the principal one is in the lower dorsal region, and is directed to the right and backwards. The aorta is preserved, to show its adaptation to the altered form of the spine. D. 26

(In Case C.)

1124. Portion of a Spine, with a strong lateral curve in which all the dorsal and the first lumbar vertebræ are comprised. The aorta and the vena azygos have been injected, to show the change in their direction, corresponding with the altered form of the spine: their diameter is not lessened. D. 15

(In Case C.)
For other Specimens, see Series I, Nos. 272 *and* 273.

ANTERO-POSTERIOR CURVATURE.

1125. Bones of the trunk of an old woman. The dorsal portion of the spine is deeply curved backwards. The dorsal vertebræ are reduced in size anteriorly, but their texture is not distinctly altered. Between the ninth and tenth there is a deposit of new bone. The antero-posterior diameter of the chest is augmented, and the sternum is much curved forwards, but the height and width of the chest are diminished; the ribs anterior to the angles being nearly straight, and some of the lower intercostal spaces being almost obliterated. Several of the ribs on both sides seem to have been fractured and reunited. The left half of the pelvis is atrophied, every part of the os innominatum being reduced in size. The head of the left femur is so closely anchylosed to the acetabulum, that they seem to form one bone. The shaft of the femur, which was turned inwards at a right angle with the trunk, was broken off after death. Its tissue, as well as that of the pelvis and ribs, was soft, light, and fragile. D. 38

(In Case C.)

1126. A Spine, Thorax, and Pelvis. The spine, in its dorsal region, is curved with the convexity backwards and a little to the right. The thorax, projecting very far forwards, is flattened at its sides; its transverse diameter is only five inches; its antero-posterior diameter is eight inches and a half. The pelvis is of nearly natural form and size; but its obliquity is somewhat lessened, and its antero-posterior diameter is rather diminished, while its transverse diameter is, in an equal degree, increased. D. 17

(In Case C.)

1127. The Spine of an aged person, which, in its whole extent, is curved with the convexity backwards, and a little to the right. The bones are all healthy, but light. D. 18

(In Case C.)

1128. A Spine, which, in the upper part of its dorsal region, is slightly curved to the right and backwards. New bone is formed on the margins of many of the vertebræ. D. 20

(In Case C.)

MORBID GROWTHS IMPLICATING THE VERTEBRÆ.

1129. The Upper Cervical Vertebræ of the man from whom No. 2541 in Series XXXI was taken. The bodies of the second and third vertebræ are almost entirely destroyed by a malignant tumour. The loss of substance is somewhat greater on the left than on the right side.

1130. Lower Cervical Vertebræ, with a growth involving the body of the sixth. Everywhere the outer wall of this bone is pushed irregularly before the growth, forming in front a considerable nodulated prominence, and behind, a less marked and smooth projection. On either side the tumour has made its way through the bony envelope, involving the sixth transverse process, and projecting laterally

through the fifth and sixth intervertebral foramina. At the last-named points it involves, chiefly on the right side, the nerves which principally form the brachial plexus. The vertebral arteries pass through the lower part of the tumour, and the canal of the right is somewhat narrowed. The spinal cord is compressed by the expansion of the posterior wall of the body of the sixth cervical vertebra, the antero-posterior diameter being lessened chiefly upon the right side. A portion of bone is separated from the remainder of the body to show the extent of encroachment upon the canal. IV. 47

The woman, from whom this preparation was obtained, died with recurrent sarcoma, originating in the uterus, and produced as a secondary formation in the pericardium, lungs, and body of the sixth cervical vertebra. Before death she suffered from paralysis, especially affecting the right arm and leg.

The case is fully described in the *Transactions of the Pathological Society*, vol. ix, p. 327.

1131. Section of seven Dorsal Vertebræ, from a man who died with scirrhous cancer of the breast and other organs. Five of these vertebræ are affected with scirrhous cancer. In the first and last two the cancellous tissue is filled, and in great measure displaced by firm, greyish substance, which had exactly the same characters as the cancer of the breast. Of the two middle vertebræ nothing remains but fragments, infiltrated with cancerous substance, and enclosed in a cavity which was filled with other detached fragments and softened cancer. The intervertebral substance between these two vertebræ is disorganised, and its remains lie in the cavity with their fragments; the corresponding substances between the vertebræ above and below are softened at their centres. IV. 39

The chief indication of this affection of the spine was severe pains, like those of rheumatism, in the lower extremities and loins. The cancerous breast is in Series XLVII, No. 3172. There was also a tumour of the humerus, which is preserved in Series I, No. 510.

1132. Section of the Lower Dorsal and Upper Lumbar Vertebræ, from a man, aged 56. There is considerable atrophy of the osseous tissue, the cancelli of which are occupied by a soft vascular pulp. This, under the microscope, presented numerous cells, possessing all the characters of those of soft cancer. A similar change had taken place in the ribs, the sternum, and the upper half of the iliac bones. A small cancerous tumour was attached to the inner surface of the second bone of the sternum. The duration of his illness was four months.

1133. The other half of the previous specimen, macerated and dried. It shows more plainly the great extent to which the vertebræ have been destroyed.

1134. Part of a Sacrum and the lower Lumbar Vertebræ. The right ala and a portion of the middle of the sacrum, and also the right side and centre of the body of the last lumbar vertebra, have been destroyed by a morbid growth.

From a man, aged 53 years, who died with a malignant pulsating tumour, springing from the right ilium, which had existed for three years. The tumour was soft and brain-like: it had almost entirely destroyed the ilium, and had extended to the sacrum and spine.

INJURIES OF THE SPINE.

FRACTURE.

1135. Portion of a Spine, in which the right half of the posterior arch of the atlas has been completely detached by fracture. IV. 7

1136. Fracture of the Odontoid Process, taken from a man, aged 20 years, who was struck down by a packing case, which fell from a crane on to his head. Immediately after the injury there was complete paralysis of the trunk and extremities, and the breathing was entirely diaphragmatic. He survived the injury two hours and a half. It will be observed that the fracture passes through the weakest part of the base of the odontoid process, beginning posteriorly at the point at which the nutrient artery enters the bone, and terminating at the point of greatest concavity on the anterior surface of the body of the vertebra.—See *St. Bartholomew's Hospital Reports*, vol. xiii, p. 237.

1137. First and second Cervical Vertebræ, with part of an Occipital Bone. The odontoid process of the axis, softened and ulcerated, is fractured across its base, just below the level of the transverse ligament. The latter, as well as the other adjacent structures, retain a natural appearance. IV. 46

From a woman, aged 36 years, who had enjoyed good health until about four months prior to her death. She then began to complain of obscure pains about the back of the neck, which persisted. In moving about she carried her head stiffly, and always expressed a dread of moving it suddenly. One morning, whilst stooping over a tub peeling potatoes, her head fell forwards, and she was seen to drop. When picked up, a few seconds later, she was dead.—*Vide* also Nos. 1094, 1153.

1138. Portion of a Spine, with oblique fractures through the arches of the fourth and fifth cervical vertebræ, and a vertical fracture through the body of the fifth. D. 2

(In Case C.)

1139. Section of a Spine, in which there is a fracture of the body of the sixth cervical vertebra. The middle and fore part of the body is crushed between the two adjacent vertebræ, and its posterior part is pressed backwards into the spinal canal, so that the spinal cord must have been nearly divided. The spinous process of the vertebra retains its natural position. IV. 4

Presented by Henry Earle, Esq.

1140. A portion of the Spinal Column and Cord, including parts of the Cervical and Dorsal Regions. The body of the fourth cervical vertebra is crushed and driven backwards, causing an angular projection, by which the cord is compressed. The anterior portions of the vertebræ above and below are approximated.

From a boy, aged 15 years, who was admitted into the Hospital with complete paraplegia from the shoulders downwards, except that he could slightly move the scapula, and could expel urine and retain fæces. Respiration was almost entirely diaphragmatic.

Six months previously he fell off a scaffold, fifty-five feet high, and struck his neck, but was not stunned. He was taken to the London Hospital, suffering from paralysis of both upper extremities, and remained there two months, when he was discharged not materially better.

Two months before his death he became an out-patient at this Hospital, and improved so much that he could raise both hands to his mouth and walk a considerable distance. A fortnight before his death he was thrown down in the street, striking on the back of his head, and was brought to the Hospital in the condition described.

1141. Portion of Spine in the cervical region. There has been a fracture, with separation of the fifth from the sixth vertebra. The upper portion of the spine is displaced forwards, so that the body of the fifth vertebra lies in front of the sixth; the upper and posterior portion of the latter projects backwards, and obliterates the spinal canal.

From a boy aged 15 years, who received an injury to the spine one year and seven months before his death. There was complete paralysis of sensation and motion in the trunk and extremities immediately after the accident. The spinal cord was found to have been completely destroyed at the seat of injury.—See *Harley Ward Book*, vol. iv, p. 209.

1142. Fracture of one of the lower Cervical Vertebra, with displacement of the

parts above and below the line of fracture. By the removal of the spines and arches of the vertebræ, the spinal cord is shown to have been nearly torn across at a spot immediately opposite to the injured bone. The accident happened three months before death.

1143. Portion of a Spine, showing a comminuted fracture of the last Cervical Vertebra. The anterior portion of the body is pressed forwards, and the posterior portion backwards, into the spinal canal, by the approximation of the vertebræ above and below it.—See *Lancet*, 1839–40, p. 572.

Presented by W. F. Barlow, Esq.

1144. Section of the last three Cervical and first three Dorsal Vertebræ, showing a comminuted fracture with considerable displacement, which has been followed by anchylosis. C. 130

1145. Portion of a Spine, in which there is an extensive comminuted fracture of the arches and bodies of the fifth, sixth, and seventh cervical and first dorsal vertebræ. IV. 6

1146. Section of a Spine, in which there is a fracture of a Dorsal Vertebra, either the third or the fourth. The front of its body is crushed between the vertebræ above and below it, and the posterior part has been driven backwards into the spinal canal, and has completely divided the cord. The spinous and articular processes of the fractured vertebræ are torn away from those of the vertebra above it, leaving a wide gap at the posterior part of the spinal column. IV. 1

1147. Portion of a Spine, including the lower Cervical and upper Dorsal Vertebræ. A fracture extends obliquely through the upper and anterior part of the fourth dorsal vertebra, and the bodies of the third and fourth vertebræ are torn asunder. The spinal cord is diffluent opposite the seat of the injury.

From a man who injured his spine by a fall down the hold of a ship. Immediately after the accident the spines and laminæ of the injured and adjoining vertebræ were removed by an operation, performed by Mr. Willett, with relief of the existing symptoms of compression of the cord. On the fifteenth day after the operation, while the patient was being moved from one bed to another—the spine not being supported—he became completely paraplegic, and died three or four days afterwards.

1148. Portion of a Spine, in which a fracture extends obliquely through the body of the tenth dorsal vertebra, its superior articular processes, and the inferior articular and spinous processes of the ninth dorsal vertebra. D. 1

(In Case C.)

1149. Portion of a Spine, with a transverse fracture through the body of the twelfth, and a vertical one through that of the eleventh, dorsal vertebra. D. 3

(In Case C.)

1150. Portion of a Spine, including the lower Dorsal and upper Lumbar Vertebræ. A transverse fracture, now united, extends obliquely downwards and forwards through the body of the first lumbar vertebra. The upper fragment of the fractured vertebra, with the upper portion of the spinal column, is carried forwards and rests on the upper and anterior part of the lower fragment, to which it is connected by callus. The articular processes between the last dorsal and first lumbar vertebræ are widely separated.

From a man, aged 29 years, who whilst wheeling a barrow filled with gravel, was knocked down by the sudden fall of a tree on to his back. When examined soon after the injury, an angular projection was discovered in the dorso-lumbar region. Extension was made by "persons pulling at the superior and inferior extremities," with the effect of greatly lessening the projection.

He lived for more than a year after the accident.—See *Medico-Chirurgical Transactions*, vol. xvii, 1832.

Presented by Mr. Barlow.

1151. The first Lumbar Vertebra of the man from whom specimen 2549, Series XXXI, was taken. There is a nearly horizontal fracture through the body. When examined, the cleft was a little open in front, but there was no material displacement of either fragment.

Vide No. 1074.

SEPARATION (DISLOCATION) OF THE VERTEBRÆ, WITH OR WITHOUT FRACTURE.

1152. An Atlas and Axis. The odontoid process has been dislocated in such a manner as to leave a very narrow space only for the spinal cord, and the bones have subsequently become anchylosed. IV. 49

They were found in a graveyard at Aberdeen, and presented by Mr. George Banks.

They are described by Sir James Paget in the *Medico-Chirurgical Transactions*, vol. xxxi, 1848.

1153. Model of an Atlas and Axis. The atlas is dislocated, and the odontoid process fractured. The spinal cord was not injured. IV. 50

The case is described by H. B. Phillips, Esq., in the *Medico-Chirurgical Transactions*, vol. xx, 1837, p. 78.

1154. The Cervical Spine of a Man, aged 24 years, who fell out of the first floor window of a house. The fourth cervical vertebra is dislocated forwards from the fifth; the intervertebral fibro-cartilage is ruptured, but there is no fracture of the bodies of the vertebræ. The superior articular processes of the fifth vertebra are placed posterior to the corresponding inferior processes of the fourth, and the tip of the right inferior articular process of the latter is broken off. The cord is compressed by the projecting upper part of the body of the fifth vertebra, but is not lacerated. The spines of the fourth and fifth vertebræ are widely separated, but there is no lateral displacement. There was at first complete paralysis of the trunk and legs, subsequently the arms became paralysed. The patient survived the accident eleven days.—See *Kenton Ward Book*, vol. v, p. 406.

1155. Sections of a Spine, in which there is a complete dislocation of the bodies and articular processes of the fourth and fifth cervical vertebræ, without any fracture. The fourth vertebra is carried forwards, so that the posterior margin of its body rests on the anterior margin of the body of the fifth, and the apex of its spinous process rests on the base of the spinous process of the fifth. IV. 12

The patient, a robust man, 22 years old, fell with a heavy weight on his head and the upper part of his neck. He was immediately deprived of all sensation in the trunk and limbs, and of all power over the voluntary muscles of those parts. He died three days and a half after the fall. The case is described by Sir. W. Lawrence in the *Medico-Chirurgical Transactions*, vol. xiii, p. 394. London, 1825.

1156. Portion of a spine, in which there is dislocation of the articular processes of the fourth and fifth cervical vertebræ, with fracture of the lower edge of the left inferior articular process of the fourth, and a separation of the intervertebral fibro-cartilages uniting the bodies of the fourth and fifth, and of the fifth and sixth. IV. 3

1157. Portion of a Spine, in which there is dislocation of the bodies and articular processes of the fourth and fifth cervical vertebræ, with fracture of the upper margin of the body, and of the arch, of the fifth. The body of the fourth

vertebra projects in front of the fifth, and the membranes of the spinal cord appear tense and compressed beneath it. IV. 9

It is necessary to observe, that the fissures upon the arches of the vertebræ, on each side of the spinous processes, were made by the saw in opening the spinal canal.

1158. Portion of a Spine, in which there is complete dislocation of the bodies and articular processes of the fifth and sixth cervical vertebræ, without any fracture. IV. 8

1159. Portion of a Spine, in which there is dislocation of the bodies and articular processes of the fifth and sixth cervical vertebræ, with fracture of the articular processes of the fifth. The articular processes of the fifth are raised up from those of the sixth, but have not passed in front of them. The posterior part of the intervertebral fibro-cartilages appears to have been deeply torn. IV. 10

1160. Portion of a Spine, in which the articular processes of the fifth and sixth cervical vertebræ are dislocated, and the right articular process and body of the sixth are broken. The intervertebral substance between the fifth and sixth vertebræ is also completely torn across. The spinal cord has been divided along its middle, for the purpose of showing the softening and laceration of its substance opposite the injured vertebræ, and especially in the line opposite the division of the intervertebral fibro-cartilage. IV. 2

1161. Portion of a Spine, in which there is dislocation of the bodies and articular processes of the fifth and sixth cervical vertebræ, with fracture of the body of the sixth. The right inferior articular process of the fifth has passed to the front of the right superior process of the sixth; the corresponding processes on the left side more nearly retain their places, so that the upper part of the spine is twisted round towards the left side. IV. 11

1162. Portion of a Spine, in which there is a complete dislocation of the articular processes of the sixth and seventh cervical vertebræ, and a partial dislocation of their bodies, without any fracture. The right half of the intervertebral substance is torn through; the left half is nearly entire. The articular processes of the sixth vertebra were raised up above those of the seventh, but had not passed to the front of them. IV. 13

The patient fell, from a height of about sixteen feet, on his head, and his neck was bent by the weight of his body. He lost all sensation and power of voluntary motion in the trunk and limbs, and died on the third day after the accident.

1163. Portion of a Spine, in which there is dislocation, with fracture of the edges of the articular processes, of the sixth and seventh cervical vertebræ. The body of the sixth cervical vertebra is separated from the intervertebral substance below it, and projects in front of the seventh. IV. 5

1164. Portion of a Spine, including the Lower Cervical and Upper Dorsal Vertebræ. The intervertebral substance between the last cervical and the first dorsal vertebræ is torn through, and the upper portion of the spine is carried forward in such a manner, that the first dorsal vertebra presses backwards upon the cord, which is here crushed, softened, and ecchymosed.

From a heavy man, aged 63 years, who fell upon his shoulders. There was complete loss of motion below the thorax, but sensation was perfect. He died on the fifth day after the accident.

1165. Section of part of the Dorsal Region of a Spinal Column, in which there had been dislocation between the seventh and eighth vertebræ, with fracture of the body and spinous process of the seventh. The line of fracture can be seen in the specimen.

1166. Right half of the preceding Specimen. It shows the almost complete repair that has taken place in the bones and soft textures of the spine; and the disintegration resulting from the injury of the cord.

From a spare man, aged 48 years, who fell backwards on to his shoulders from a scaffold, about six feet from the ground. A well-marked displacement between the 7th and 8th dorsal vertebræ was observable on his admission into the Hospital; the 7th with the bones above appeared to be carried forwards, producing an unnatural groove from the 4th vertebra to the broken 7th spinous process. The superior articular processes of the 8th could be felt. The ordinary symptoms of lesion of the corresponding part of the spinal cord were present.

The patient, under chloroform, was subjected to extension by means of pulleys, with the result of replacing the bones in their normal position, and entirely removing the distortion. He died from exhaustion, consequent on the paralysis, nine weeks after the injury.

1167. Sections of a Spine, in which it is probable that there had been a fracture and dislocation of the first lumbar and the last dorsal vertebræ. The first lumbar vertebra, unchanged in texture, but deprived of the fore part of the upper margin of its body, is thrown backwards, so that its fractured anterior margin is placed under the posterior margin of the body of the twelfth dorsal vertebra. It appears as if the last dorsal vertebra, with the superior portion of the spine, had been pushed forwards and downwards, breaking off and sliding over the upper and anterior margin of the first lumbar. In this position the two vertebræ are firmly fixed by bone deposited in front of the angle formed by their bodies. At the angle thus formed the body of the first lumbar vertebra projects posteriorly into the spinal canal, reducing it to a fourth of its natural diameter. A distance of an inch intervenes between the spinous processes of the last dorsal and the first lumbar vertebræ. On the right side their corresponding articular surfaces appear to have been separated, and re-united by bone; on the left side the inferior articular process of the last dorsal vertebra is wanting: but there are appearances as if it had been united to the posterior part of the body of the displaced first lumbar vertebra: it was probably detached in the dissection. D. 4

(In Case C.)

SERIES VI.

DISEASES AND INJURIES OF MUSCLES, TENDONS, AND BURSÆ.

DISEASES AND INJURIES OF MUSCLES.

FATTY DEGENERATION.

1168. A Soleus Muscle, completely degenerated into fat. No muscular fibres can be discerned; in their places is a fatty tissue, like that of the ordinary healthy fat, which on the posterior part is arranged in a fasciculate manner as the muscular fibres were, but anteriorly appears lobulated or granular. V. 1

The gastrocnemius and other muscles of the back of the same leg were similarly altered. The muscles on its anterior part were pale and flabby. All its other parts appeared healthy.

Presented by Thomas Carden, Esq.

Vide Series L, No. 3219.

OSSIFICATION.

1169. Part of a Vastus Internus Muscle, with the superficial and deep femoral arteries. Large portions of the muscle are ossified. The largest portion of bone lies so close to the arteries, that it probably presented during life the characters of a pulsating tumour. V. 2

1170. Two thin irregular plates of Bone, which were found in the muscles close to the Femur in No. 375, Series I. A. 130

ABSCESS.

1171. Two Psoas Muscles. Externally they presented an ordinary appearance, but on cutting into them, their interior was found to be filled with dried-up pus, which occupied the large cavities shown in the preparation. These, which, with their contents, usurped the place of the greater part of the muscles, were lined by an irregular, glistening membrane, of an imperfect fibrous structure, not unlike that which often walls-in a chronic abscess. V. 30

From the body of a middle-aged man brought in for dissection.

1172. Part of the dried-up Pus removed from the cavities shown in the preceding preparation. V. 31

SLOUGHING.

1173. A slough of the Tibialis Anticus Muscle, which was separated in a case of diffuse cellulitis of the lower third of the leg, following Syme's amputation, upon a man aged 53 years.

TUMOURS.

1174. Sections of a Rectus Femoris Muscle, in which are several large lobulated and circumscribed masses of a soft flocculent medullary substance. The muscular fasciculi are separated by the morbid growths, but appear of healthy texture. v. 6

A large medullary tumour from the axilla of the same patient, is preserved in Series I, No. 3334.

ENTOZOA.

1175. Portions of a Longissimus Dorsi Muscle, in which are specimens of the Cysticercus Cellulosæ. The cysts are placed in the cellular tissue connecting the muscular fasciculi. In the upper portion of the muscle are two cysts, from which the cysticerci lying loose in the bottle were removed; in the lower portion the cysticercus is attached to the interior of its cyst. v. 7

These specimens were taken from the body of an old man, in many of whose voluntary muscles similar entozoa existed.

1176. Portions of Muscle and Liver, from a Pig, in which are numerous cysts, like those in the preceding specimen, and probably, like them, containing cysticerci. v. 8

1176a. The Biceps Muscle of a Man, thickly studded with trichinæ. All the muscles were similarly affected.

Presented by the Pathological Institute of Leipsic.

INJURIES OF MUSCLES.

Rupture.—*Vide* Nos. 1181 to 1183; also Series IV, Nos. 1036, 1039, 1043.

DISEASES AND INJURIES OF TENDONS.

DEPOSIT OF URATE OF SODA.

1177. A mass of Urate of Soda removed from around the tendons of the extensor communis digitorum. Its crystals have the ordinary acicular form. v. 29

From the body of an old woman who had long suffered from gout.

TUMOURS.

1178. A Fibrous Tumour involving, and blending with the tendons of the flexor carpi radialis, palmaris longus, and flexor sublimis. It had existed, slowly enlarging, for five years, but had never occasioned the slightest inconvenience. v. 32

It was removed, after death, from the right fore-arm of a man who died from acute pneumonia.

1179. A Medullary Cancerous Tumour growing in the substance of the tendon of the rectus femoris muscle, immediately above the patella. The patella, divided at its centre, is seen beneath the tumour.

A woman, 31 years old, presented herself at the Hospital with a tumour larger than a hen's egg, and growing either upon, or as it seemed more probable, in the substance of the patella, and expanding its walls. She stated that she first observed it seven years before. It had increased for five years slowly, but latterly its growth had been rapid. On the operating table, and when an incision was made into it, it appeared to be a fibrous tumour of the rectus tendon, separated from the knee-joint only by a thin layer of synovial membrane, closely adherent to its surface. As it could not be extirpated without opening the joint, it and the patella were removed together. For a time the patient did well; but the disease returning in the scar, amputation was performed through the middle of the thigh, but she died of exhaustion. The microscopic structure of the growth is that of medullary cancer, and the secondary formation was soft, mottled pink, and like "brain-matter."—*Vide St. Bartholomew's Hospital Reports*, vol. iv, p. 180.

INJURIES TO TENDONS.

EVULSION.

1180. The end of the Tail of a Rat, with numerous long slender tendons attached to it, which it is probable were pulled out with small pieces of their muscles, in the attempts which the animal made to escape, when its tail had been caught in a trap. v. 3

1181. The last Phalanx of the Right Thumb surrounded by its natural coverings, and retaining, attached to it, the tendon of the flexor longus pollicis, which, bringing with it some of its muscular fibres, was torn out of a boy's arm, the extremity of the thumb having been caught in a machine. At the same time the bones of the fore-arm were bent, and the humerus fractured about its middle third. The patient recovered without an unfavourable symptom.—See *St. Bartholomew's Hospital Reports*, vol. viii, p. 509. v. 26

1182. The Tendon, with part of the muscular fibres of the Flexor Longus Pollicis, which were torn out from a man's arm. v. 4

The patient was a butcher, whose thumb was caught by a meat-hook, on which he remained suspended till the muscle gave way. He recovered quickly from the injury.

1183. Parts of the bones of a Middle Finger, with the tendon and some of the muscular fibres of their portion of the extensor muscle, dried. v. 5

They were torn away from their connections by the explosion of a gun while the person's hand was resting on the muzzle.

Presented by Henry Bateman, Esq.

1184. A Fore-Finger, with the accompanying tendons, which was torn off from the hand of a man by a blow from a ramrod, which had been discharged from a gun.

1185. A Finger, with one of its tendons torn off by an injury, of which a record was not made.

DISPLACEMENT OF TENDONS FROM THEIR GROOVES.

1186. The upper portion of a Humerus, with part of the long tendon of the Biceps muscle. The tendon has passed out of its groove and is confined to the adjacent part of the humerus by a tough membranous sheath, formed apparently by condensed fibro-cellular tissue. The tendon was attached to the margin of the glenoid cavity in the usual manner. v. 9

PROCESS OF REPAIR OF TENDONS AFTER SUBCUTANEOUS DIVISION.

REPAIR IN ANIMALS.

The following Specimens were prepared by Sir J. Paget and Mr. Savory.

1187. Leg of a young rabbit killed twenty hours after the division of the Tendo Achillis. The upper end of the tendon has retracted above three-quarters of an inch, and is slightly connected to the lower portion by a soft gelatinous blood-speckled material effused between them within the sheath.

1188. Leg of a rabbit killed sixty-eight hours after division of the Tendo Achillis. The ends of the divided tendon are about three-quarters of an inch apart, and the interval between them is filled by a firm clot of blood.

1189. Leg of a rabbit killed six days after division of the Tendo Achillis. The skin alone has been removed; it was more firmly adherent than usual to the parts beneath; and here and there were small clots, the remains of minute

extravasations of blood. There is a general enlargement of the tendon within the sheath where divided, the swelling tapering gradually into the natural size and shape of the tendon. The wound of the sheath is soundly and completely closed.

1190. Hind Leg of a young rabbit killed six days after divisions of the Tendo Achillis. On removing the skin, the same appearances were observed as in the last specimen. The enlargement has been divided longitudinally. The ends of the tendon are separated about three-quarters of an inch, and the interval between them has been filled up by a gelatinous material, in which the ends of the divided tendon are embedded. The outer portion of this new material is firm and resisting, the central portion softer, and as if blood-stained. Outside the new material and around it are several small patches of ecchymosis. In minute structure the inner and softer portion appeared granular, while the outer and firmer portion was more distinctly fibrous.

1191. Leg of a rabbit ten days after division of the tendon. The ends of the tendon are connected by firm new material, in the centre of which are one or two distinct small clots.

1192. Leg of a young rabbit killed ten days after division of the Tendo Achillis. The ends of the tendon were separated to the extent of almost an inch. The gap has been filled by a firm tissue, with small spots of ecchymosis in the centre. The new material was firm and elastic, closely united with the sheath, and blending gradually with the ends of the tendon, but easily distinguishable from the glistening and shining fibres of the latter. It was very firm, not easily torn out under the microscope, and consisted of tolerably well-formed fibrous tissue, dark in colour, and thickly interspersed with granular cells.

1193. Leg of a young rabbit killed ten days after division of the tendon, and injected with carmine. The ends of the tendon are separated rather more than half an inch. Between them is an oval circumscribed clot, decolorised, but surrounded by the same firm new material, which is blended with and connects the ends of the tendon. In structure, this new material presents the same characters as the last specimen.

1194. Leg of a rabbit killed fourteen days after division of the Tendo Achillis. A large quantity of blood has been poured out between the separated portions of the tendon, extending upwards into the substance of the muscle above. The ends of the tendon were firmly connected by new fibrous tissue outside the clot.

1195. Leg of a very young rabbit killed thirty-four days after division of the Tendo Achillis. The tendon has so completely regained its normal size and appearance that a very slight enlargement only marks the spot where it had been divided. Just opposite this point the sheath has been turned back.

REPAIR IN MAN.

1196. Parts of the Tibialis Posticus and Flexor Longus Digitorum of a child in whom the tendons of these muscles were divided a short time before death. The ends of the divided tendons, retracted about two lines asunder, are united by a slender bond of new-formed material. v. 24

Presented by W. Adams, Esq.

1197. A portion of the left Tendo Achillis of a man aged 32, which was divided one month before the leg was amputated. It is perfectly united, but the line of division is distinguishable by the granular appearance of the surface. v. 35

198. Two portions of a Tendo Achillis which had been probably torn apart a short time before death. A small amount of lymph is effused on the ruptured surfaces. From a subject brought into the dissecting rooms. v. 35

DISEASES OF THE SHEATHS OF TENDONS.

CHRONIC INFLAMMATION AND ITS RESULTS.

BODIES FOUND IN THE FLUID CONTAINED IN CHRONICALLY INFLAMED SHEATHS OF TENDONS AND GANGLIA.

199. A collection of numerous small, round, and oval Cysts, with soft pale walls, which were found in the diseased sheaths of tendons described in specimen No. 1202. They floated in an opaque, yellow, and moderately thick fluid. 20

200. A collection of Cysts, like those last described, but rather larger and with thinner walls, which were removed from a palmar ganglion in a young woman. 21

201. A collection of soft solid Bodies, removed from the sheaths of tendons. Most of them are thin, oval, flat, sharp-edged, and smooth, like melon seeds; some are of irregular shape, or branched. 22

GANGLION.

202. Part of a Hand and Fore-arm, in which the sheaths of the extensor tendons of the fingers and thumb have been greatly enlarged by the accumulation of fluid containing the small bodies shown in No. 1199. The diseased sheaths are laid open; and one of them is shown extending half-way up the fore-arm. The walls of the sheaths are thickened; their internal surfaces, in many parts granular, or like mucous membrane. The partitions between some of them appear to have been absorbed, so that several form one cavity. 19

Vide No. 3359, Series L.

DISEASES OF FASCIÆ.

CONTRACTION OF PALMAR FASCIA.

203. Part of a Hand, in which the middle and ring fingers were permanently flexed, in consequence of the thickening and contraction of the portions of the palmar fascia connected with them. 23

DISEASES OF BURSÆ.

CHRONIC INFLAMMATION AND ITS RESULTS.

Simple Enlargement with Collection of Serous Fluid in their Interior.

204. A Shoulder-Joint, exhibiting an enlargement of the bursa between the deltoid muscle and the capsule. The lining of the bursa is smooth, like the surface of a mucous membrane. At the bottom of the bottle are numerous flat oval bodies, of moderately firm consistence, which were contained in the enlarged bursa. 12

1205. Part of the left Knee-Joint of a child, with the muscles and tendons forming the inner boundary of the popliteal space. The bursa between the tendon of the semi-membranosus and the inner head of the gastrocnemius is enlarged so as to form an elongated oval, lobed cyst, about two inches in length, and an inch and a half in width. v. 25

Presented by Dr. James Reid.

Enlargement with Fibrous Bands stretching across the Interior.

1206. Two enlarged Bursæ, removed with the integuments from over the Patellæ of the same person. The walls of both the bursæ are thick, tough, and laminated, and cords are attached by one or both extremities to their internal surfaces. v. 13

1207. A similar Specimen. The cyst is larger than either of the preceding, and was distended by a honey-like fluid. v. 14

1208. A similar specimen removed after death with the patella and other parts. The enlarged bursa is laid open from the front, showing its interior traversed by numerous slender tendinous cords, from some of which lobulated growths are suspended. v. 15

1209. Part of a Patella, with the bursa lying on its anterior surface. The bursa is enlarged, its walls thickened, and tough fibrous cords pass across its interior, running almost horizontally from side to side, attached at either extremity, but free in the rest of their extent. v. 27

Enlargement with Thickening of the Walls.

1210. An enlarged Bursa, removed with the integuments from the front of a Patella. The walls of the bursa are between two and three lines in thickness, tough, fibrous and laminated, and its cavity was nearly filled by a substance like fibrin or imperfect false membrane, some of which is still attached to its internal surface. v. 16

1211. Sections of a Bursa, which was removed from the front of a Patella. In consequence of long standing inflammation, its walls have become from one to four lines in thickness, and very hard, tough, and coarsely fibrous. Its internal surface is irregular, and its cavity was filled by a small quantity of yellow fluid, in which the small white bodies, now lying at the bottom of the bottle, were contained. Most of these bodies are hollow, their walls being formed by a soft white substance. v. 17

1212. Two Bursæ, which were removed from the anterior surfaces of the patellæ of the same person. In each specimen the cavity of the bursa is almost completely obliterated by the formation of a firm fleshy substance in it, thickening its walls. v. 18

1213. An enlarged Bursa removed from over the patella. Its walls are greatly thickened, and its interior is about half filled with tendinous cords and lobulated growths. Many of the latter are attached by slender pedicles, and are loosely suspended from the walls. v. 28

1214. A Bursa Patella. Its cavity is much enlarged, and its walls thickened. It contained a clear, yellowish-brown viscid fluid, in which floated a number of pinkish, semi-transparent glistening bodies of various shapes and sizes, and presenting a nodulated surface.

Removed from a woman, aged 60, in whom it had existed many years.

1215. An enlarged Bursa Patella inverted, showing two nodular outgrowths

from its inner surfaee about as large as a pea; some smaller elevations are also seen.

The microseope shows that the tissue composing the proliferations is in continuity with the wall of the bursa. It consists of connective tissue containing round or oval indifferent cells, so abundant as to obscure the matrix under a low power. Towards the centre of the growth strands of well-developed connective tissue containing fewer nuclei are seen.

From a girl, aged 17, who first noticed the enlargement of the bursa two years before its removal.—See *Lucas Ward Book*, vol. vi, p. 164.

Microscopic sections are preserved, No. 57.

1216. A Patella and Ligamentum patellæ, on whieh a bursa was situated. There is a pateh of fibrous degeneration with erosion of the cartilage of the patella. The knee-joint was affeeted with rheumatoid arthritis.

Vide No. 694, Series II, and No. 3358, Series L.

SERIES VII.

DISEASES AND INJURIES OF THE PERICARDIUM, AND OF THE HEART.

INFLAMMATION OF THE PERICARDIUM (PERICARDITIS).

EFFUSION OF LYMPH.

1217. A Heart, on the surface of which, as well as on the interior of the reflected pericardium, there is an abundant deposit of soft lymph. The outer surface of the lymph is reticulated; its attached surface is loosely adherent. XII. 1

From a child 16 months old, who died after a few days' illness.

1218. The Heart of a Child 8 months old, with an abundant recent deposit of lymph over the whole free surface of the pericardium. The external portion of the pericardium is thickened. The heart is not enlarged. XII. 34

Presented by Dr. West.

1219. A Heart and Pericardium, from a child 15 months old. Both the layers of pericardium are covered by a thick coating of soft lymph. The lymph on the heart has a coarsely reticular surface; that on the parietal pericardium is in a thinner and smoother layer; and the two are connected at the base of the heart by several columns of lymph passing from the one to the other. XII. 56

Presented by Dr. West.

1220. A Heart with its Pericardium, the latter acutely inflamed. 30

From a native of China brought into the dissecting-room. The other membranes of the chest were slightly affected.

From the collection of J. R. Farre, Esq., M.D.

1221. A Heart, with layers of recent lymph over the whole free surface of the Pericardium. A thin and transparent membrane has been formed over the lymph which covers the reflected pericardium. The lymph presents a reticulated surface. The heart is slightly enlarged. XII. 5

From a patient who had acute rheumatism.

1222. A Heart, greatly enlarged in all its parts, and with thickening of the mitral valve. Near the edge of the valve is a fringe of minute, fibrinous deposits. Both surfaces of the pericardium are covered with a layer of reticulated and flocculent lymph, some of which had been recently deposited. The parietal pericardium is thickened. XII. 70

From a boy 14 years old, who had had repeated attacks of acute rheumatism.

1223. A Heart, with an abundant recent deposit of lymph upon the Pericardium. The lymph is deposited in a moderately firm layer, about a line thick, from the surface of which arise numerous growths, some of which are attached by slender pedicles. The bicuspid and aortic valves are thickened. The whole heart is enlarged. Its vessels are injected, but it is doubtful whether any of the injection has penetrated the lymph. XII. 4

The patient, a woman 25 years old, was attacked with signs of pericarditis during recovery from acute rheumatism. These were subdued, and she appeared convalescent, when a second similar attack ensued, and was speedily fatal.

1224. A Heart and Pericardium. Lymph is deposited in a thin layer, minutely reticulated, and with some columnar processes attached to it, both upon the inner surface of the external portion of the pericardium and upon the surface of that which covers the heart. The heart is considerably enlarged. XII. 45

1225. A Heart and its Pericardium, the latter inflamed. Lymph is abundantly deposited on both portions of the pericardium in reticular membranous layers. 29

From the collection of J. R. Farre, Esq., M.D.

1226. A Heart, with a very abundant deposit of lymph over the whole free surface of the Pericardium. The lymph forms fine branching and shreddy processes of considerable length, which hang loosely within the sac of the pericardium. The heart is not materially enlarged. XII. 7

1227. A Heart, with Lymph deposited in thick layers, and in a coarsely reticular form, upon the surface of the Pericardium. The lymph appears soft, and blood is effused in many parts of it. The heart is much enlarged. XII. 8

1228. A Heart, with the sac of the Pericardium. The heart is generally enlarged, and lymph is abundantly deposited on both surfaces of the pericardium. The lymph is firm and closely adherent; part of its surface is regularly reticular; another part forms granular and warty eminences. The reflected pericardium is thickened and indurated. XII. 2

1229. A Heart, with both layers of the Pericardium completely adherent. A part of the reflected pericardium has been removed to show some apparently recent lymph beneath it. The heart is enlarged. XII. 3

Vide Nos. 1310, 1370, 1371.

ORGANIZED ADHESIONS (Adherent Pericardium).

1230. A Heart, exhibiting the effects of inflammation of the Pericardium, with hypertrophy of its muscular substance, and disease of its valves. The pericardium is thickened; lymph is deposited over its free surface; and, in one situation, the pericardium is adherent to the heart. The walls of the left ventricle are considerably increased in thickness, and its cavity is enlarged. The mitral and aortic valves are thickened and opaque. XII. 39

From a boy 12 years old, who had many attacks of rheumatism.
Presented by S. G. Lawrance, Esq.

1231. Section of a Heart, with the corresponding portion of the Pericardium. The pericardial sac was completely filled by lymph, of which this section shows a layer nearly an inch in thickness at one part. XII. 50

1232. A Heart, on which there is a general and close adhesion of the Pericardium. The adhesions are completely organized. The aortic valves are thickened, contracted, and recurved; and there is a warty mass of fibrin on one of them. The lining membrane of the aorta, and that of the heart below the aortic valve,

are thickened and opaque. The left ventricle is dilated, and its walls are thickened. XII. 6

For other Specimens of Adherent Pericardium, see Nos. 1229, 1235, 1262, 1292, 1313, 1484.

LIQUID EFFUSIONS.

1233. A Heart and Pericardium, from a Child 9 years old. The external portion of the pericardium is greatly dilated and thickened, and there is an abundant deposit of lymph upon its internal surface, as well as upon that of the pericardium covering the heart. At the lower part of the bottle is a large mass of lymph which was loose in the pericardium. Besides lymph, the pericardium contained two pints of turbid serous fluid. XII. 43

Presented by Dr. Moore.

1234. Heart from a Child aged 2½ years, who died from pyæmia, following acute subperiosteal suppuration of the femur. The surface of the pericardium is covered by a thick layer of recent lymph; its cavity was filled with pus.

The Femur is contained in No. 31, Series I.—See *Stanley Ward Book*, vol. iii, p. 388–9.

TUMOURS AND ALLIED MORBID GROWTHS IN THE PERICARDIUM.

CALCAREOUS OR BONE-LIKE FORMATIONS IN THE PERICARDIUM.

1235. Portion of a Heart encircled at its base by a broad irregular plate of bone-like substance, which occupied the place of the external or parietal layer of the pericardium. The pericardium in the rest of its extent was firmly adherent to the heart by false membrane, which had in some parts a hardness equal to that of cartilage. The internal parts of the heart appear healthy. XII. 32

1236. A Heart, in which there is abundant formation of bone-like tissue in the pericardium covering both the auricles and ventricles. In some situations there are lines of osseous substance corresponding with the course of the coronary vessels; but, from a careful examination in the recent state, it appeared that the osseous substance had been deposited, not in those vessels, but in the cellular and adipose tissue around them. XII. 47

From a man aged 21 years.

Presented by E. A. Lloyd, Esq.

1237. The Heart of a man, aged 58 years, who died of acute bronchitis. It weighed 18 ounces. There is abundant deposit of earthy matter in the substance of the right ventricle and auricle, and to a much less extent in the upper and back part of the left ventricle.

1238. A Heart, showing calcification of its walls or pericardium.

The patient was a man aged 56 years, who died in a lunatic asylum, after suffering for seventeen years from delusions and excitement; with no melancholia. In the beginning of 1875 he became jaundiced, and the legs began to swell. The urine was not albuminous; there was no sugar, but it was loaded with bile-pigment. Later on the breathing became embarrassed, and he died. No cardiac symptoms were noticed, and no history of rheumatism could be obtained from the wife. A brother was said to have died from rheumatic fever. There was no history of insanity in his kindred. On post-mortem examination the convolutions of the brain were found wasted; there were white spots on the pia mater; the arteries were enlarged and tortuous. The liver was wasted, cirrhotic, and stained with bile. The spleen was large and very firm. The kidneys were large, with adherent capsules; the cortical substance wasted, red, not pale, and waxy. No amyloid reaction was found anywhere. There was no calcification of the larger arteries.

Presented by Dr. Claye Shaw.

Vide No. 1313.

LYMPHO-SARCOMA.

1239. The Contents of a Thorax. The pericardium is infiltrated by a growth, which appears from microscopic examination to be a lympho-sarcoma. At the base of the heart it is over an inch in thickness, but towards the apex gradually becomes thinner. The inner surface is lined by a distinct fibrous membrane, which is rugous and papillated. The growth forms a large projecting mass at the base of the heart, and extends along the pulmonary vessels to the lungs. The arch of the aorta is surrounded and compressed: the vagi are seen entering the growth. The trachea, bronchi, and œsophagus are free. A group of infiltrated and conglomerate mediastinal lymphatic glands is connected with the tumour: the cervical glands are also affected. The heart is small, and the visceral layer of pericardium is but slightly thickened. The cavity of the pericardium contained a sanious fluid. The tumour is moderately firm, and its section pale and homogeneous. A similar tumour of small size was connected with the xiphoid cartilage.

Microscopic Examination.—The growth is composed of small round cells, exactly resembling those in the enlarged lymphatic glands, supported by an abundant matrix of ill-developed connective tissue. Fibrous trabeculæ traverse it in various directions. In the enlarged lymphatic glands the distinction between the cortical and medullary portion is lost, and the trabeculæ have disappeared; a considerable quantity of newly formed connective tissue is interspersed among the cell elements. No multi-nuclear cells were seen.

From a man, aged 20 years. The first symptoms observed were pain in the chest, sickness after food, and palpitation. There was general impulse over the præcordium when he first came under observation. Five months later he was readmitted. There was then a projection of the left supra-mammary region close to the sternum. He had dyspnœa, subject to exacerbation, and laryngeal cough. There was fullness at the root of the neck on both sides. The radial pulses were unequal. The symptoms of intra-thoracic pressure increased, and he died two months later, one year after the onset of symptoms.—See *Mark Ward Book*, 1879; also *Transactions of the Pathological Society*, vol. xxxi, 1881. Microscopic sections are preserved, Nos. 58, 59.

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"WHITE SPOT" ON PERICARDIUM.

1240. Opaque white thickening of a portion of Pericardium. 27

From the collection of J. R. Farre, Esq., M.D.

DISEASES OF THE SUBSTANCE OF THE HEART.

HYPERTROPHY.

1241. The Heart of a man aged 62, who had long suffered from disease of the aorta and its valves. The heart weighs 32 ounces, this increase being due to hypertrophy of the left ventricle. XII. 98

Presented by Mr. Edgar Barker.

Vide Nos. 1223, 1224, 1229, 1314, 1319; and 3214, Series L.

ATROPHY.

1242. A Heart, very much reduced in size, but in which the proportions of its several parts are preserved, and its tissue appears healthy. It weighed 5 ounces and 4 drachms. It measured a little less than four inches across the base, and five inches and a quarter from the base to the apex. XII. 57

From a man 50 years old, of middle stature, who died with carcinoma of the stomach, in a state of extreme emaciation.

1243. An exceedingly small Heart, which weighed only 3 ounces and 1 drachm.

From the body of a woman, aged 46, who died in the Hospital of cancer of the pylorus. The duration of her illness was two years. Emaciation was extreme, and the other viscera were remarkably small.

FATTY INFILTRATION.

1244. A Heart, exhibiting great enlargement of the cavity of the left ventricle, with thickening of its walls. There is abundant formation of fat on the whole exterior of the heart; on the right ventricle it forms a layer half an inch in thickness. The coronary arteries are not ossified. The aortic and mitral valves are large and thin, but appear of healthy texture. XII. 12

The patient, a man 25 years old, attributed the origin of his disease to a fit of passion twelve months before his death. He shortly after observed unnaturally strong pulsations in all his large arteries and at his heart. These continued till his death, all the arteries appearing to be dilated. He had also great dyspnœa, aggravated in paroxysms, during which he was in the habit of taking large quantities of digitalis.

1245. Large Heart taken from a man, who, although but five feet seven or eight inches in height, weighed some months before death 30 stone 6 lbs. He was well known for his gluttony. The heart deprived of blood weighed 2 lbs. $6\frac{1}{4}$ ozs. The aortic and pulmonary valves are competent. The liver weighed 6 lbs. $10\frac{3}{4}$ ozs. It was engorged with dark blood and fatty. The kidneys weighed together $21\frac{1}{4}$ ozs.

Presented by Dr. Thomas Oliver, of Preston.

FATTY DEGENERATION.

1246. Heart of a man, who died under the influence of chloroform. The ventricular walls, especially on the right side of the heart, appear to be in a state of advanced fatty degeneration.

For other specimens, see 1247 *to* 1252, 1256, *and* 1370.

RUPTURE OF THE HEART FROM DISEASE.

1247. A Left Ventricle ruptured. The opening is a mere fissure through the muscular substance, at the junction of the anterior wall with the septum, near the middle of the heart. The wall of the ventricle around the opening is not thinner than in other situations: but the muscular substance is softer than is natural, and of a brown colour. There are numerous small deposits of fatty matter beneath the lining of the aorta, and of the left ventricle; and the quantity of fat on the exterior of the heart is greater than is natural. XII. 22

1248. A Left Ventricle ruptured about mid-distance between its base and apex, and near the junction of its anterior wall with the septum. The aperture is of considerable extent; and around it the wall of the ventricle is of its natural thickness. The muscular substance appears soft, and of a dull brown colour. Earthy matter is deposited in the coats of the aorta. XII. 27

1249. Portion of a Heart in which rupture of the left ventricle has occurred. The heart is of natural size, with abundant fat at its base and over the coronary arteries that branch on its surface. In the middle of the prominent rounded part of the left ventricle is a rent, about an inch in length, extending obliquely downwards from the middle of the ventricle towards its apex. Below this, and in a line towards the apex, are two much smaller rents, which, like the larger, have irregular edges. They all extend into the cavity of the ventricle, and are seated in what appeared shortly after death as "a space of about three square inches, in which the colour of the muscular substance was a mottled dull yellow, or drab and pink; and no fascicular or fibrous structure could be discovered." In this space the muscular tissue was in a state of advanced fatty degeneration, while that of the rest of the heart was normal, or nearly so. The principal branch of the left coronary artery, leading to this part of the heart, is enlarged:

its coats are thickened and made rigid with opaque yellow deposits, and its cavity is filled with a firm coagulum. It seems to be obliterated at the margin of the degenerated part, while the rest of the coronary arteries, though having many thickened and rigid patches, are pervious. XII. 85

The patient was a fat woman, 52 years old. "She appears never to have complained of breathlessness or palpitation, and never was known to faint. But latterly she spoke of a sense of oppression at the chest." The impulse and sounds of the heart were feeble. Three years before death she had a paralytic seizure, from which she slowly and partially recovered. Her death was instantaneous.

A further account of the case is in the *Reports of the Pathological Society of London*, vol. iii, p. 264, by Dr. Baly, by whom the specimen was presented.

1250. The Heart of an old woman, aged 82 years. She was a lunatic, and had been in Bethlehem Hospital forty-two years. She died suddenly while sitting quietly. At the lower and front part of the left ventricle, close to the septum, is a rent through the wall, the muscular tissue of which is in an advanced state of fatty degeneration.

1251. Rupture of the wall of the left ventricle of a Heart, the muscular tissue of which has undergone fatty degeneration. The valves contain calcareous matter.

The rupture proved instantly fatal. The pericardial cavity was filled with a blood-clot, weighing one pound.

Presented by J. S. D. Danes, Esq.

1252. Heart of a Demented Woman, aged 70 years, who died suddenly, after a paroxysm of rage. On the under surface of the left ventricle is a jagged rent, about three-quarters of an inch in length, through which blood escaped so as to fill the sac of the pericardium. The muscular tissue is degenerated.

The brain was much atrophied. More than three pints of fluid escaped from the arachnoid cavity, the lateral ventricles, and spinal canal. All the arteries of the brain (especially those at the base) were very atheromatous.

Presented by Dr. Claye Shaw.

1253. Rupture of the left ventricle of a Heart near its apex. 26

From a powerful, healthy man, of temperate habits, a watchmaker, aged 46. The rupture occurred at a moment when he was greatly excited in consequence of the misconduct of a relative. The symptoms commenced whilst he was walking, and consisted of a sensation of weight and tightness on the left side of the chest, with dyspnœa. The second day he walked three or four miles with difficulty, and worked as usual, the distress continuing. The third day he walked two miles with great difficulty, his symptoms being much aggravated. The fourth day he walked half a mile, stopping seven or eight times, and described the sensation as that of a cord tightly drawn round his chest. On the fifth day he complained of a dull pain in the region of the heart, which in a few hours became severe, and extended, especially along the upper extremities.

He died in great agony, both of body and mind, a few hours later.—*Journal of Morbid Anatomy*, 1828, p. 14.

From the collection of J. R. Farre, Esq., M.D.

1254. Heart of an Adult. The cavity of the right auricle is larger than natural, and its membranous lining is thick and opaque. The tricuspid valve is thickened. The cavity of the left ventricle is larger than natural. Its muscular substance is considerably thickened, and its lining is opaque. The aortic valves are a little thickened, and there is soft matter deposited beneath the lining of the aorta just above the valves. The coronary arteries are thickened, and there is earthy matter deposited between their coats. A rupture of the septum between the ventricles has taken place near its union with the posterior wall of the heart, by which a free communication is formed between the ventricles. On the side of the left ventricle the opening is about two inches in length, and of

a semilunar form. On the side of the right ventricle, the opening is much smaller and rounded. XII. 37

DILATATION OF ONE OR MORE OF THE CARDIAC CAVITIES.

1255. A Heart, in which the cavities of both Ventricles are enlarged, while their walls are thinner than is natural. The walls of the right ventricle are especially diminished in thickness. The valves on both sides of the heart are healthy. XII. 10

The patient was a man 34 years old. The case is related by Mr. James, in the *Medico-Chirurgical Transactions*, vol. viii, p. 449. London, 1817.

1256. A Heart, of which both the ventricles are dilated, thin-walled, and pale. The inner surface of the left ventricle, especially at its septum, is mottled with pale-yellowish lines and spots due to fatty degeneration of its fibres. XII. 79

1257. A Heart, exhibiting great enlargement of the cavity of the left ventricle, with some increase of the thickness of its walls. The aortic valves and the internal coat of the aorta are slightly thickened and opaque. XII. 9

1258. Part of a Heart, exhibiting thickening and rigidity of the mitral valve and of its tendinous cords, with extreme contraction of the left auriculo-ventricular opening. The cavity of the left auricle is enlarged; its lining membrane is opaque and thickened; and a thick layer of dry laminated coagulum is firmly attached to the upper and posterior part of its wall, where it is rather more dilated than elsewhere. XII. 19

1259. Part of a Heart, exhibiting a great dilatation of the left auricle, with thickening of its membranous lining, and with thickening, induration, and contraction of the mitral valve and tendinous cords. Portions of fibrin, arranged in concentric layers, adhere to the thickened membranous lining of a part of the auricle which is more dilated than the rest. XII. 51

The patient was a woman, 41 years old, who had been for some years subject to rheumatism, and had signs of diseased heart for twenty months before her death.

Vide No. 1315.

PARTIAL DILATATION OF THE CARDIAC WALL, OR ANEURISM OF THE HEART.

1260. Section of a Left Ventricle, with a shallow Aneurismal Pouch at its side. The inner surface of the pouch is smooth, and apparently formed by the lining of the ventricle partially covered by layers of fibrin. The pericardium is adherent to its outer surface. XII. 30

1261. A Heart, exhibiting a pouch formed by dilatation of a circular portion of the anterior wall of the left ventricle near its base. The pouch was filled by laminated coagulum; its mouth is round, narrow, and smooth; and its parietes, apparently, consist of the serous covering and inner membrane of the heart, thickened, united, and having small deposits of a soft yellowish substance in and around them. The muscular tissue of this part has entirely disappeared. The coagulum which was within the pouch is at the bottom of the bottle. XII. 53

The patient was a girl 19 years old. The disease of the heart probably commenced about 18 months before death; but its progress was marked by various and singular attacks of paralysis, erysipelas, and signs of phlebitis.

1262. A Heart, with a Sac attached to the left side of its left ventricle. The sac is spheroidal in form, and upwards of three inches in its greater diameter. Its walls are composed of the exterior of the ventricle, the pericardium, and a dense tissue by which the opposite surfaces of the pericardium were adherent. It is lined by irregularly laminated coagula: the phrenic nerve runs over its anterior part; it communicates with the cavity of the ventricle by an oval aperture,

about a quarter of an inch in diameter, the margins of which are smooth and round. A portion of white glass is passed through this aperture. The muscular substance of the ventricle immediately around the aperture has disappeared, and is replaced by a dense white tissue. The rest of the heart is healthy; but its exterior is covered by false membrane by which it adhered to the parietal pericardium. It may be presumed that there was in this case a rupture, or an ulceration, through the wall of the left ventricle; that the blood was prevented from being effused into the cavity of the pericardium, by adhesions previously formed between its two surfaces; and that these adhesions, and the pericardium for a considerable distance around the aperture, were stretched by the force of the blood, so as to form the sac, in nearly the same manner as a false aneurism is formed by the distension of the sheath of an artery after the destruction of the coats. XII. 58

From a woman 37 years old, who had had syphilis for many years in its worst form. She had long been under observation at the Penitentiary; but had presented no distinct sign of disease of the heart. She died with dysentery and slight bronchitis.

Presented by Dr. Baly.

1263. A Left Ventricle and Auricle. In the boundary between the auricle and ventricle the wall of the heart is dilated into a pouch, like an aneurism, which extends round the outer part of the base of the left ventricle, from the anterior to the posterior margins of the septum. The mouth of this pouch is just below, and partly covered by, the mitral valve: its cavity is half filled by concentric layers of fibrin. The cavity of the left ventricle is much enlarged; its walls are thickened; and its lining membrane, near the aneurismal sac, is thick, rough, and has yellow deposits in it. The exterior of the heart is covered by adhesions, which fixed it closely to the inner surface of the pericardium. The mitral valve and its tendinous cords are thickened and opaque, especially in those parts which are stretched over the mouth of the aneurismal sac. XII. 28.

The patient was a man between 40 and 50 years old. He had long suffered with signs of diseased heart.

1264. An Aneurism, the size of a large hen's egg, opening into the left ventricle at the very apex; the opening is about the size of a threepenny piece, and its edges as smooth and as densely fibrous as a valvular orifice. The aneurism itself is divided by a septum into two parts, which communicate with each other immediately below the opening into the ventricle. The walls of the sac are thin and fibrous, except at the part where there is a thick layer of laminated fibrin. There were exceedingly dense adhesions all around the aneurism. The cause of death was general dropsy associated with contracted kidneys.

From a person aged 33 years.—See *Post Mortem Book*, Case 197, May 17th, 1871.

1265. An Aneurism at the Apex of the Left Ventricle. The pericardium is universally adherent; the heart of great size, most of the swelling being formed by the sac of the aneurism, which would hold a cocoa nut. The aneurismal sac communicated with the left ventricle by a small opening the size of a split pea.

The patient, an old soldier, when first seen in October, 1872, complained of extreme breathlessness on slight exertion, and a sense of tightness across the chest. He referred his illness to a strain experienced a month previously in an attempt to lift a heavy package, when he felt something give way in his chest, and fell down in a severe faint. The heart's action was tumultuous on slight disturbance; the cardiac dulness was extended downwards and to the right, and there was a double murmur at the apex. His symptoms were relieved under treatment, and he was able to work as a carman until October, 1874, when he died with pleuritic effusion.—See *Transactions of the Pathological Society*, vol. xxvii, 1875, or *Luke Ward Book*, October 19th, 1874.

1266. A Left Ventricle ruptured at its Apex; a quill is introduced into the

aperture. Around the aperture the wall of the ventricle is very thin, and appears to have been dilated into a kind of aneurismal sac before the rupture took place. The aperture is nearly filled by a round firm clot of blood. XII. 18

1267. Heart from a Man aged 60, who died of Emphysema. In the undefended space there is a hemispherical pouch about the size of half a marble. Its walls are thin and translucent, and crossed by bands of tissue arranged like the musculi pectinati of the right auricle. The aneurism is not perforated.—See *St. Bartholomew's Hospital Reports*, 1876, vol. vii, p. 241.

1268. A Heart, showing an aneurismal dilatation at the unprotected spot of the interventricular septum.

1269. Aneurism of the Right Auricle, from a woman aged 51 years, who died of emphysema pulmonum. At the back of the right auricle, just above the division between the auricle and ventricle, is a rounded prominence the size of half a marble, thin walled, lined with fibrin, and communicating with the cavity of the auricle.—See *Transactions of the Pathological Society*, vol. xxix, 1878.

FIBRINOUS MASSES, AND BLOOD-CLOTS IN THE CARDIAC CAVITIES.

1270. The anterior wall of a Right Auricle and Ventricle, with part of a firm, decolorised coagulum clinging to its inner surface. This coagulum is moulded to the inequalities of the muscular bands, as shown in the upper portion of the preparation, where it is turned away from the cardiac wall. It also extends uninterruptedly behind the cusps of the auriculo-ventricular valve. On one side, the right, is a layer of coloured coagulum, part of a clot which commenced in the venæ cavæ, extended thence into the cavities of the heart, and terminated at the apex of the right ventricle. XII. 94

1271. Part of the Posterior Wall of the same Cavities, and the commencement of the pulmonary artery. The remainder of the clot which occupied the right cavities is here seen. Above, it commences as a tape-like portion which occupied the upper and left side of the canal of the superior vena cava, the remainder being filled by the coloured coagulum already described. The decolorised clot extends behind the valve cusps, and is continued through the infundibulum into the pulmonary artery. The latter portion is superficially streaked, above and below, with thin layers of coloured coagula, but these have no connection with those derived from the venæ cavæ. On the other hand, they can be traced upwards into the canal of the pulmonary artery. XII. 95

From a woman who died with colloid cancer of the ovaries. Toward the last she suffered from compression of the lungs and considerable dyspnœa, but no symptoms arose to indicate, before death, the formation of clots in the cardiac cavities.

1272. Part of a Heart, with a small portion of lymph attached to the inside of the right auricle and, apparently, organized. A section has been made of the lymph, to show that it is so closely united to the lining membrane of the auricle that the boundary between them cannot be discerned. XII. 25

1273. A Heart, with the cavities laid open. The whole of the right ventricle is occupied by a firm white almost glistening clot entangled amongst the chordæ tendineæ. It extends upwards to the right auricle, which it completely fills, and also into the branches of the pulmonary artery, entirely blocking them up. The left ventricle also contains a smaller but equally white clot, which extends into the auricle just over the mitral valves. This is blood-stained on one side where the current passed over it. The walls of the heart are thin and in a state of fatty degeneration.

From a man, aged 21 years, who had suffered many months from phthisis. His breathing suddenly became difficult, and he died in the course of a few hours. After death the veins of the neck and of the upper extremities, down to the fingers' ends, were full of blood. The lungs contained masses of tubercle in various stages, and the lower lobe of the right was much congested. The pericardium contained six ounces of clear serum.

Presented by Mr. Gross, by whom the case is described in the *Medical Times and Gazette*, May 12th, 1866.

1274. Heart of a Woman, aged 43 years, with dilatation of all its cavities. The mitral orifice is greatly contracted, so as only to admit the tip of the little finger. In the left auricle was found the round ball suspended over the heart. It is about an inch in diameter, very elastic, very smooth, without any trace of pedicle, and lay quite loose in the left auricle. It appears to be formed of fibrin, and without doubt had been in process of formation a long time before death.

For a drawing of the recent specimen, see No. 83. A similar specimen is in the Museum of St. George's Hospital.

1275. The Appendix of a Left Auricle. It is occupied by a clot, which is closely adapted to its wall. The top of the coagulum is raised to show the ragged, broken-down character of its interior. In the recent state this central portion was soft and diffluent, of the colour of ordinary pus. It consisted of granular matter and oil globules, the latter in great abundance. XII. 91

From a case of rigid and patent mitral valve, with hypertrophy and dilatation of the left auricle.

1276. Part of a Left Auricle. A large coagulum clings to its endocardial lining, occupying the most posterior portion of the cavity, the pulmonary veins opening on either side. The surface of the clot is rough, and in parts presents a beaded appearance, the beads being arranged in tolerably uniform lines across the current of the blood. The clot contained a quantity of grumous, yellowish material, consisting of granular matter and abundant oil globules. This escaped through a post-mortem rent in its wall, seen on the front of the coagulum, where also can be noticed the tenuity of the shell of fibrin which separated it from the blood. The endocardium retains a natural appearance. XII. 93

From a case of patent and thickened mitral valve, which proved fatal from extensive pulmonary apoplexy. The auricle was greatly dilated. No symptoms existed during life to indicate the formation of the coagulum.

1277. Portion of a Heart in which there is a round mass attached to the inside of the left auricle, near the fossa ovalis. When recent, the mass was, in texture, like a gelatinous polypus of the nose, yellowish, but spotted with blood, semi-transparent, uniform, and smooth on its cut surface. On detaching a portion of it from the lining of the auricle, this was left rough and otherwise altered in its texture. XII. 35

From a man 30 years old, who died with fracture of his pelvis received on the day before his death.

1278. A Left Ventricle, in which there are several round and oval portions of fibrin firmly adhering to its internal surface, among the fleshy columns near the apex. The two largest portions present cavities which contained a fluid resembling pus. XII. 13

From a man 35 years old, who died with phthisis.

For other specimens, see Nos. 1311, 1315, 1340 *and* 1342.

MYO-CARDITIS.

1279. Section of a left Ventricle. Its membranous lining is partly ulcerated, and partly thickened with deposits of earthy matter; pus is extensively diffused through the muscular structure at the apex of the ventricle. XII. 14

GUMMA IN THE HEART.

1280. The Specimen was taken from the body of a man, aged 38 years. Two bulgings were found near the apex of the left ventricle; one the size of a marble, and the other of a walnut. They are lined on the inside with fibrin, and are due to the appearance on the wall of the ventricle of a firm whitish-yellow substance dispersed in islets amongst muscular tissue. This white appearance is also seen along the attachment of the small flap of the mitral valve. Under the microscope this material presented the characters of a gumma.—See *Trans. Path. Soc.*, vol. xxix, 1878.

TUBERCLE.

1281. Portions of the Left Ventricle of a Heart, in the middle of the muscular substance of which there is a small spherical mass of tubercular matter, about two lines in diameter. The surrounding tissue is healthy. XII. 61

From a negro, 30 years old, who had tubercular disease of the lungs, liver, spleen, and intestines.

TUMOURS AND ALLIED MORBID GROWTHS IN THE HEART.

BONE-LIKE FORMATIONS IN THE CARDIAC WALL.

1282. Section of a Left Ventricle, exhibiting a large nodulated and granular mass of substance like bone, in the tissue around the attachment of the mitral valve. XII. 31

1283. A Heart preserved, independently of the disease of its valves, to show the calcareous degeneration of portions of the wall of the left auricle. The bone-like plates are covered by the delicate endothelium lining the endocardium. XII. 92

FIBROUS TUMOUR.

1284. The interventricular Septum of a Heart. Projecting into the left ventricle towards the anterior part of the septum is a roundish plaque about the size of a florin, which has been divided. The surface of the projection was found covered by a ragged, decolorised, friable clot, evidently old. It is rough and fibrous looking, and its lining is continuous with the endocardium. The section of the projection shows a firm fibrous structure about a quarter of an inch thick, which appears to be formed by a fibrous thickening of the endocardium. Immediately beneath is a layer of loose fibrous tissue intermixed with which, but more abundantly towards the deeper surface, is a small quantity of muscular tissue. The endocardium is generally thickened over the surface of the ventricle, the thickening being greatest around the projection. The left brachial artery was plugged from its commencement to its bifurcation; the plug also extended into the radial and ulnar arteries. Emboli were also found in the digital, superior mesenteric and hepatic arteries. Two small perforating ulcers were found in the jejunum, evidently the result of deficient blood supply from embolism.

Microscopic Examination.—The growth was found to be composed of fibrous tissue, which was dense, and arranged in parallel bundles throughout the greater part of its thickness, but loose and reticular towards the deeper surface. No distinct endothelial lining could be detected on the ventricular surface to which the remains of blood clot were adherent. The connective tissue between the subjacent muscular fibres was increased.

The specimen was taken from a man, aged 36 years, who was admitted to the Hospital with dry gangrene of the tips of the left index and little fingers, supposed to be due to frost bite. Symptoms of peritonitis developed themselves, and he died collapsed. See *Pitcairn Ward Book*, vol. vi, p. 28; also an account of the case by Mr. H. T. Butlin, in the *Path. Soc. Trans.*, vol. xxxi, 1880. Microscopic sections are preserved, No. 61.

1285. A Heart, showing a firm, whitish tumour in the upper part of the posterior wall of the left ventricle.

Microscopically it consisted of fibrous tissue.

There was evidence of chronic endocarditis of the mitral and aortic valves.—See *St. Bartholomew's Hospital Reports*, 1872, for account by Dr. Wickham Legg; and *Post-Mortem Book*, vol. iii, p. 6, 1872.

SARCOMA.

1285a. A Heart, with numerous small soft tumours beneath the layer of the pericardium covering the heart, and beneath the membrane lining its cavities. XII. 29

Recent microscopic examination showed that the tumour was a round-cell sarcoma. *See* a microscopic section, No. 62.

The case is described as one of "Tuberculated Sarcoma," by Mr. Abernethy, in his *Surgical Observations; On Tumours*, vol. ii, p. 53. London, 1810.

CANCER.

1286. Part of a Heart, with a large medullary cancerous tumour in the right ventricle. The specimen, in its recent state, was thus described: "The heart was of about the natural size, externally healthy, with the exception of a pale spot on the anterior surface of the right ventricle: the walls were thin and flabby; the valves efficient; and all the cavities healthy, except that of the right ventricle, which appeared nearly filled by some roundish masses of a dull red colour and soft consistency, springing from a point corresponding with the pale spot on the external surface of the heart; their free, rounded extremities were directed towards the pulmonary artery, and the tip of the longer lobule was not more than an inch distant from the lower edge of its valves. Parallel to this and to its right lay a similarly-shaped but shorter mass, which was separated from the next mass by the columnæ carneæ giving origin to the chordæ tendineæ for the left flap of the tricuspid valve; so that the next lobule, which was shorter than the two preceding, thicker and somewhat cleft at its fore end, projected into the ring of the valves. Below lay two or three roundish, flattened masses, extending quite to the apex of the ventricle. Just about the attachment of the larger masses the muscular substance of the heart appeared infiltrated with encephaloid matter; but nearer the apex, where the tumours were smaller, the muscular substance was comparatively, if not quite free; the masses being attached by roots ramifying among the columnæ carneæ, and adhering to the surface without actually penetrating into the muscular substance of the organ. XII. 75

The patient was a man, 48 years old. Two years before death his testicle enlarged with medullary cancer. It was removed three months before death, and he recovered from the operation, but was unable to continue at his work. No characteristic signs of this disease of the heart existed during life: "A systolic murmur was audible at the apex, of a faintly musical character, and one of a soft, blowing character was heard in both the pulmonary artery and the aorta." The patient died exhausted, but never had hæmoptysis, anasarca, or enlargement of the superficial veins of the abdomen. Medullary cancer was found in a large mass on the lumbar vertebræ, and in a smaller one in the neck.

The case is related by Dr. Ormerod in the *Medico-Chirurgical Transactions*, 1847, vol. xxx, p. 39. For a drawing of the fresh specimen, see No. 92.

1287. Portion of the Heart of the same patient from whom specimen No. 501 in Series I was taken, with a small Medullary Cancer imbedded in its muscular substance near its apex. I. 240

MELANOTIC TUMOURS.

1288. Section of a Heart, in every part of which there are minute deposits of melanotic substance. Some of these deposits are beneath the pericardium, others beneath the membrane lining both the auricles and ventricles, and others are imbedded in the muscular substance. Some minute deposits of the me-

lanotic substance are seen beneath the lining membrane of a portion of the vena cava superior which is attached to the heart. XII. 46

The other section of this heart is preserved in the Museum of the Royal College of Surgeons of England.

A melanotic tumour from the skin of the same patient is in Series L, No. 3314, and the history of the case is added to its description.

Presented by Dr. Norris.

1289. Melanotic Tumours in the substance of the heart of a man aged 47 years. Similar deposits existed in great number, from the size of a millet seed to that of a pea, in the integument of the abdomen and beneath the pleurae and peritoneum. Other masses were found in the lungs, liver, kidneys, supra-renal capsules, bronchial and mesenteric glands, and the omentum. In the last-named part masses were found of the size of the fist.

1290. Part of the Heart of the young Woman from whom the melanotic eye in Series XXXIII, No. 2629, was removed. It presents several small round masses of melanotic substance imbedded in the muscular substance, and one projecting into the cavity of the left ventricle. XII. 41

TUMOURS OF UNCERTAIN NATURE.

1291. Section of a Left Ventricle, showing several small deposits of soft medullary substance between its muscular fibres. XII. 23

From the same person as No. 2718 in Series XXXV.

1292. Part of a Heart, in which there is a large mass of firm medullary matter in the substance of the apex of the right ventricle, and of the septum. The morbid mass has not altered the external form of the heart, but it projects with a coarsely granular surface into the cavity of the ventricle, and has raised up the tricuspid valve: in its middle, its substance is softened and broken down. The pericardium is in every part closely adherent. The aorta is dilated, and both it and its valves have earthy deposits in them. XII. 60

From the patient, from whom the eye, Series XXXIII No. 2625, was removed. He died two years after the operation with this medullary disease of the heart, similar deposits in the lungs, and a large medullary tumour on the lower jaw.

1293. A Heart, in which there are imbedded, in the middle of the posterior wall of the left ventricle, several small masses of a yellowish firm substance. Some of them are prominent in the cavity of the ventricle; but the largest, which is darker and firmer than the others, projects externally, and is situated at the bottom of a recess in the wall of the heart, like the sac of an aneurism. The muscular substance of the heart is wasted around this largest mass, and a thin layer or capsule of fibro-cellular tissue invests it. The pericardium was adherent to its surface and to the adjacent part of the surface of the ventricle. XII. 65

The patient was a girl, who, for a long time before her death, had complained of nearly constant pain about the heart, but presented no other sign of cardiac disease. She died suddenly.

Presented by Dr. Huc.

1294. Section of part of a Calf's Heart, from the apex of which a large mass of medullary substance projects, which appears to have commenced in the muscular substance. XII. 84

ENTOZOA IN THE HEART.

1295. A Heart, exhibiting a collection of Acephalocyst Hydatids between the lining membrane and the muscular substance forming the posterior wall of the right ventricle. The hydatids are contained in a distinct cyst, between two and

three inches in diameter, a portion of which is turned downwards. The cyst projects into the lower part of the right ventricle, and gives a rounded form to the apex of the heart. XII. 40

The patient was a woman 40 years old. Her health had appeared declining for some years; and about eighteen months before her death she began to have dyspnœa on exertion and occasional pain at the heart. Six weeks before death more severe signs of disease of the heart were brought on by an unusual exertion, and these continued and were aggravated till she died. The case is related by Mr. Evans, and the preparation is engraved, in the *Medico-Chirurgical Transactions*, vol. xvii, p. 507. London, 1832.

Presented by Herbert Evans, Esq.

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EFFECTS OF ASPHYXIA.

1296. The Heart of a child, aged 3 weeks, who died of asphyxia. The right cavities were found greatly distended with dark fluid blood, and on their surfaces, which are generally congested, are numerous ecchymoses. The superficial vessels of the right side engorged with blood contrasted with those on the left side. The left cavities were much contracted.

DISEASES OF THE VALVES AND ENDOCARDIUM.

ENDO-CARDITIS.

1297. Part of a Boy's Heart, in which there are numerous fibrinous vegetations attached to the lining membrane of the left auricle. Many of them are half an inch in length, lobed and pendulous, and attached by narrow bases. The lining membrane of the auricle appears slightly thickened. XII. 73

The patient was 15 years old, and had been considered as suffering with some organic disease of the heart for 13 years. Four months before his death he had an attack of hemiplegia, which was followed by persistent contraction of the left arm and leg. Five days before death, after a sudden seizure like apoplexy, he became completely unconscious, and so died.

After death, upwards of six ounces of serum were found in the cerebral ventricles and the spinal canal. The right optic thalamus and the parts about it were softened and dark, but no apoplectic effusion existed.

Presented by Mr. Sankey.

1298. A Heart suspended so as to expose to view the left auricle and ventricle, A patch of papillomatous vegetations extends over a considerable portion of the surface of the left auricle, and also over the auricular surface of the adjacent cusp of the mitral valve. Both cusps of the mitral valve are thickened and contracted. A pendulous vegetation is attached to the aortic cusp.

From a woman, aged 27 years. She had an attack of acute rheumatism when 16 years of age, and another seven years later. A loud systolic murmur was heard at the apex, and very loudly behind. She suffered no inconvenience from her heart affection, but died of uræmia, supervening from an acute exacerbation of chronic nephritis.

Traces of infarcts were found in the kidney, and more recent infarcts in the spleen.

Vide Nos. 1300, 1342, and 1357.

VEGETATIONS AND DEPOSITS OF FIBRIN ON THE VALVES.

299. Mitral and Aortic Valves, with a middle cerebral artery, and its chief branches. The free border of the mitral valve is thickly studded with a ridge of rough cauliflower-like masses of firm white fibrin, forming warty excrescences of various sizes and shapes. The aortic valves are studded by a similar collection of smaller warty vegetations. The texture of the valves is scarcely changed. Impacted within the right middle cerebral artery, just at its origin, is a firm plug of pale, fibrinous substance, about the size of a hemp-seed,

completely blocking up the canal of the vessel; but there is no appearance of disease in the coats of the artery. It is believed that the fibrin obstructing the artery was detached from the valves of the heart, and carried in the stream of blood to the spot at which it was arrested. XII. 86

The patient, 24 years old, had suffered for two months with diarrhœa and rheumatic pains, when he was suddenly attacked with severe pain in the region of the heart, and palpitation. These were relieved, but a fortnight after their commencement he suddenly became hemiplegic on the left side. He remained with impaired sensation, and complete loss of voluntary motion, to the time of his death, about three weeks after the hemiplegic attack. He had also sloughs on his back, and swelling of the feet and legs, and his femoral veins were hard, cord-like, and painful.

The substance of the brain was remarkably pale and soft. Clots of old formation existed in the left lateral sinus and internal jugular vein. The tricuspid valve was covered with fibrinous deposits like those above described. The iliac and femoral veins were blocked up by old clots, without disease of their coats. Masses of fibrinous deposits were found in the lower lobes of both lungs, and the corresponding branches of the pulmonary arteries were completely plugged with old coagula. Fibrinous deposits, also, variously changed, existed in the spleen and kidneys.

A fuller report of the case is given by Dr. Kirkes, in the *Medico-Chirurgical Transactions*, vol. xxx, p. 293.

1300. A Heart, of which a great part of the mitral valve is covered with masses of fibrin, heaped up in the shape of large warty excrescences on its auricular surface, and thence extending over part of the lining of the posterior wall of the left auricle. The masses of fibrin are of various shapes and lengths; some are nearly half an inch long. They are pretty firmly attached to the thick and lengthened surface of the valve, yet portions could be readily detached, and crumbled under pressure. Several of the masses extend among the tendinous cords of the valves; and one of the cords, thickened like the rest, is ulcerated across, and portions of fibrin adhere to each of its separated ends. The left ventricle is much hypertrophied; the right side of the heart, and the other valves are healthy. XII. 87

The patient, a thin, pale woman, 24 years old, had sudden hemiplegia about three months before death. At the time of the seizure she appeared in tolerable health, but had been subject to great privations. The hemiplegia appeared to be due to detachment of portions of the fibrin from the surface of the valve; one of which, being carried on by the circulating blood, had become tightly impacted in the left middle cerebral artery, obliterating its canal, and inducing softening of the left corpus striatum and thalamus opticus. The branches of the artery beyond the obstruction were reduced to firm, narrow, yellowish cords, which were imbedded in softened cerebral substance. A similar but smaller portion of fibrin was found in the right middle cerebral artery, but did not quite block up its canal. Old clots of blood obstructed also the right external iliac artery and the right femoral vein.

A fuller report of the case, by Dr. Kirkes, is in the essay above referred to.

ULCERATION OF THE VALVES.

1301. A portion of the Heart, with the origin of the Aorta. The aortic valves are extensively ulcerated, and upon the ulcerated surface a large amount of fibrin has been deposited. Attached to the anterior cusp by a long narrow pedicle (the remains of the free margin of the valve) is an irregular mass of fibrin the size of a large nut. This mass in the recent state was continuous with a clot, which extended along the aorta, into the innominate and to the left subclavian arteries. The wall of the left ventricle is hypertrophied. The pericardium is roughened by recent lymph.

From the body of a man, aged 36 years. After suffering from rheumatic pains in the limbs for three weeks, and pains in the chest for six days, he came (walking) to the out-patients' room of the Hospital. He was admitted; and the next morning, having gone to the water-closet he was soon afterwards found dead there.

1302. A Heart, showing the condition known as Ulcerative Endo-carditis. There is a small, oval ulcer, near the base of the aortic cusp of the mitral valve; also a similar ulcer on the opposite side of the cusp: the small cusp is

unaffected. Two of the cusps of the aortic valve are almost destroyed and their remains are covered by irregular vegetations. The third cusp is entire, but abundant vegetations spring from its cardiac surface.

Vide also the following specimen.

THICKENING, CONTRACTION, AND ADHESION OF THE VALVES.

1303. An Aortic Valve thickened, rough, and irregular. Two of the cusps are adherent by their adjacent borders. The third is perforated by an ulcer, the edges of which are ragged, and everted towards the ventricle. There is some thickening of the adjacent wall of the aorta. These changes were preceded by rheumatism. XII. 90

1304. A Mitral Valve greatly thickened. Its cusps, united amongst themselves, project into the auriculo-ventricular opening, forming a rigid ring. A narrow chink remains for the passage of the blood, and was probably always patent. 36

From the collection of J. R. Farre, Esq., M.D.

1305. Aortic Valves, thickened and opaque. The chief thickening is in the adjacent halves of two valves, whose angles, either congenitally or by later morbid adhesion, are united and drawn down. They thus appear as one valve, and present in the place of their two angles a continuous, rounded, concave border. The inner coat of the aorta is thickened, opaque-white, and tuberculated. XII. 78

1306. Aortic Valves, thickened and calcareous: they nearly close the opening from the ventricle. 41

From the collection of J. R. Farre, Esq., M.D.

DEPOSITS OF CALCAREOUS MATTER IN THE VALVES.

1307. A Mitral Valve, with portions of the Aorta. On a large portion of the mitral valve and on the arch of the aorta there are abundant deposits of earthy matter. The aortic valves, and the portion of the mitral valve adjacent to them, are slightly affected with the same disease. XII. 16

1308. Aortic Valves, with abundant deposits of earthy matter in their tissue and upon their surfaces. XII. 38

DISEASES OF PARTICULAR VALVES.

DISEASE OF THE TRICUSPID VALVES.

1309. Portion of a Heart. Attached to the edge of the outer flap of the tricuspid valve there is a growth covered with fibrin, extending down a tendinous cord. This growth lay in the auricle, when the heart was opened.

From a woman, aged 44 years. A small, firmly adherent clot was found in a large branch of the pulmonary artery of the left lung. In both lungs there were numerous hæmorrhagic infarcts.—See *Post Mortem Book*, vol. vii, p. 349.

1310. A Heart, with lymph deposited on its pericardium during an attack of acute rheumatism. The tricuspid, aortic, and mitral valves are thickened, and fringed with lymph. 33

From the collection of J. R. Farre, Esq., M.D.

1311. A Heart, showing contraction of both the tricuspid and mitral orifices. Both the auricles are moderately dilated. The tricuspid orifice admits the tips of two fingers; the mitral, which is of a button-hole shape, only the tip of the little finger. The aortic valves are thickened and rigid; two of the cusps are

adherent, and a few small vegetations are scattered along their margins. A firm, coloured, apparently ante-mortem clot, is lodged behind some tendinous cords at the upper and back part of the left ventricle. A similar clot, about the size of a filbert, was found free in the left auricle; it is suspended by a thread.

From a woman, aged 34 years, who was subject to rheumatism. On her admission she had dropsy and cyanosis. The murmurs were indistinct and variable. Death took place suddenly. —See *Elizabeth Ward Book*, vol. vii, p. 74.

1312. A Heart, exhibiting thickening, opacity, and rigidity of the tricuspid and mitral valves, with contraction of both the auriculo-ventricular orifices. The cavities of the auricles are dilated, and their membranous linings are thickened. The right auriculo-ventricular orifice would just admit the passage of the fore-finger; the left would only admit the entrance of the tip of the same finger. XII. 44

1313. A Heart, in which, by thickening and contraction of the mitral valve and its tendinous cords, the left auriculo-ventricular orifice is reduced to an irregular chink, about an inch long, and from one to two lines in width. On the auricular surface of the diseased valves there are also projections of earthy matter, and deposits of layers of fibrin. The lining membrane of the left auricle is thickened and opaque: so also are the tricuspid and pulmonary valves, and, in a much greater degree, the aortic valves. The pericardium was universally adherent, and in several places, especially on the anterior surface of the ventricles, portions of bone have been formed in the adhesions. Some of these have been exposed by dissection. The whole heart is enlarged, all its cavities being dilated and hypertrophied in nearly equal proportions. XII. 59

From a man 27 years old. He could not remember to have been ever free from signs of disease of the heart, but they were greatly aggravated after an attack of acute rheumatism.

1314. Section of a Heart, showing its general hypertrophy in consequence of disease of the mitral and tricuspid valves. All its cavities are dilated, and the walls of all are, in proportion, thickened by a growth of strong muscular tissue. The mitral and tricuspid valves are thick, opaque, and leathery, and their orifices are patent and contracted; the orifice of the tricuspid having a nearly circular shape, that of the mitral, a narrow, crescentic shape. XII. 88

1315. Heart of a woman, aged 33 years. All the cavities of the heart are dilated, especially the auricles. Both appendices contained old, tough, colourless fibrin. The muscular walls are much indurated, but not greatly hypertrophied. The tricuspid orifice is greatly narrowed by adhesion of contiguous edges of segments of the valve, so as to admit only the tip of the finger. The pulmonary valves are natural. The mitral orifice is greatly narrowed by adhesion of its cusps. The aortic valves are incompetent, thickened, narrowed, adherent by their edges; there are numerous minute vegetations along the edges. The right subclavian vein was occupied by an old decolorised thrombus.

See *Post Mortem Book*, March 19, 1872.

DISEASE OF THE PULMONARY VALVES.

1316. A Heart, in which there are but two pulmonary semilunar valves, and both of these are covered with thick irregular layers of soft fibrin and vegetations, which are deposited in such quantity on the posterior valve, that they form a layer extending quite across the artery. On the internal wall of the artery there are several small wart-like bodies, which are firmly adherent to it; and behind the posterior valve, there is a circumscribed ulceration of the inner membrane. The rest of the heart, its other valves, and the large vessels, are healthy. XII. 55

The patient, a girl 21 years old, was admitted in a state of extreme debility. She had violent palpitation of the heart, and a loud bellows-sound, accompanying the first sound of the heart, was heard most distinctly at the base, and in a line extending thence upwards and to the left. She died exhausted; with old coagula, filling many of the branches of the pulmonary artery, and with pulmonary apoplexy, of which specimens are preserved in No. 1705, Series XI. The case is related by Sir J. Paget, in the *Medico-Chirurgical Transactions*, vol. xxvii, p. 182. London, 1844.

1317. A Heart, greatly enlarged, and with only two pulmonary valves. Both these valves are slightly thickened and opaque, and have large masses of fibrin mixed with earthy matter attached to their free borders. One of these masses, three-quarters of an inch in length, hangs into the cavity of the ventricle, and appears, by its weight, to have elongated and drawn out the narrow portion of the edge of the valve to which it is attached. All the other valves are slightly opaque, but thin and pliant. There is a small granular patch of fibrin deposited on the posterior surface of one portion of the mitral valve. XII. 68

1318. The Heart, laid open, of a woman, aged 24, who was born deaf and dumb. The pulmonary valves are much thickened, apparently by deposits in the substance of the cusps. Their surfaces also are roughened. All the other valves are apparently healthy. The cavity of the left ventricle at its apex was occupied by a firm laminated mass, which lay in front of the endocardium, and was therefore probably an old clot.

1319. Part of an exceedingly large Heart. There are only two pulmonary and two aortic valves, but they are all of large size. The tricuspid and pulmonary valves present some opaque thickening of their tissue, but are pliant and free. The mitral valve is thick, opaque, and very rough; its tendinous cords also are thickened. The aortic valves are thickened, indurated, contracted, and made completely rigid by masses of coarsely granular earthy matter deposited in and upon them. The whole heart is enlarged, but its several parts are increased in nearly proportionate degrees. The pulmonary artery and the aorta also are very large: but both their tissue and that of the heart appear healthy. XII. 63

The patient was 30 years old. He had acute rheumatism fifteen years before death. He had dyspnœa on exertion during the last year of his life, and in the last week he suffered extremely from it; but he had no anasarca except in his last three days.

1320. Intra-uterine Endocarditis, affecting the Pulmonary Valve. Directly the child was born (at full time) it was discovered that there was a systolic thrill, strongest in the third left intercostal space about the costo-chondral articulation, and a systolic or diastolic murmur, loudest where the thrill was strongest. Both thrill and murmur were less marked over the other parts of the cardiac region. The præcordial region was somewhat bulged. There was no cyanosis: no clubbing of the finger ends. The child died on the twelfth day, after two attacks of severe dyspnœa. On post mortem, the right ventricle was found much dilated: its walls as thick as those of a left ventricle. Aorta of smaller calibre than pulmonary artery. Condition of ductus arteriosus not noted. Foramen ovale closed. Septum ventriculorum complete. Orifice of pulmonary artery contracted to the size of a small goose quill. No trace of normal valve structure. Orifice surrounded by small pellucid, fawn-coloured vegetations. Artery apparently dilated above the constriction. Mitral and aortic valves natural. Left auricle and ventricle natural.

Presented by Dr. Herbert Taylor.

1321. Heart of a female Child, aged 8 years, who during life was cyanotic. The heart is large for her age. It has no external peculiarity. The ductus arteriosus is closed. The auricles are of the usual proportions, and their septum is complete. The left ventricle occupies its normal position with regard to the

apex, but the right ventricle is somewhat more capacious than it usually is, and its walls are a little thicker than those of the left ventricle. The infundibulum of the right ventricle is very narrow above. The pulmonary orifice is less than one-eighth of an inch across. Externally the base of the pulmonary artery is of the normal width. Looking into the artery from above, the orifice of communication with the heart is seen to be at the apex of a small bulb, rising from a membranous cone, which occupies the normal position of the pulmonary valves. This bulb is hollow on the ventricular side, and, with the cone, is probably the result of the adhesion of the pulmonary valves to one another. The edge of the orifice is fimbriated, and is thicker than the rest of the membrane, and in one-third of its circuit is calcified. There is a communication between the ventricles at the upper and anterior part of the septum ventriculorum. The opening has a muscular edge, and is large enough to admit the little finger. The child died of general dropsy. Her lungs were sound. Her liver, spleen, and kidneys were engorged, but not diseased.—See *St. Bartholomew's Hospital Reports*, vol. xi.

1322. The Pulmonary Orifice and commencement of the Pulmonary Artery of a Boy, aged 16 years. There is a circumscribed patch of vegetative endarteritis just above the junction of two cusps of the pulmonary valve. The patch is elevated, shelving gradually to the edge: at the summit is a crater-like opening with undermined edges, which leads into a small cavity bounded externally by the external coat of the artery. The disease also affects the two adjacent cusps of the pulmonary valve: the inner portion of the outermost is destroyed; its free edge is thickened, cloudy, and fringed by minute papillæ: the inner half of the middle cusp is similarly thickened, cloudy, perforated at its lower part, but its attachment is not destroyed. The remainder of the pulmonary artery was healthy, as were also the other valves of the heart.

The boy was admitted to the Hospital with what was believed to be phlegmonous erysipelas of the upper arm. Pyæmia developed itself, of which he died. The autopsy revealed acute necrosis of the humerus. He had no cardiac symptoms.—See *Henry Ward Book*, vol. vi, p. 308.

1323. A portion of the Right Ventricle and the commencement of the Pulmonary Artery. The cusps of the pulmonary valve are very extensively ulcerated. On one of the cusps a mass of fibrin the size of a hazel nut has been deposited. This, hanging by a narrow neck, and easily moving to and fro in the blood current, must have supplied to some extent the place of the valve. The heart was otherwise healthy.

From the body of a woman aged 40 years, who died in the Hospital of renal disease and pyæmia. No evidence of heart disease was observed during life; and, from the patient's great weakness for many days before her death, no auscultation of the chest was made.
Vide No. 1313.

DISEASE OF THE MITRAL VALVES.

1324. Portion of a Heart showing abundant vegetations on the mitral and aortic valves. XII. 96

See No. 1559, Series VIII.

Presented by Mr. Grosse.

1325. The left Ventricle of a Heart laid open, showing the anterior flap of the mitral valve. A portion of lymph originally adherent to its edge has separated with two of the tendinous cords to which it remains attached, and which have become twisted. XII. 99

1326. The anterior cusp of a mitral valve, thickened by disease of old standing, and displaying large blood-vessels branching in its substance. XII. 76

Presented by Dr. Ormerod.

1327. Part of a Heart, exhibiting thickening and opacity of the mitral valve. The left auriculo-ventricular opening is contracted into a narrow crescentic fissure. The cavity of the left auricle is much enlarged, and its walls are thickened. The right ventricle is also dilated, but its walls are not increased in thickness. XII. 24

1328. Part of a Heart, exhibiting thickening, opacity, and rigidity of the mitral valve and its tendinous cords. The left auriculo-ventricular opening has the form of a narrow crescentic opening, with the horns of the crescent directed, as usual, towards the aortic valves. XII. 26

1329. A similar preparation. 35

From the collection of J. R. Farre, Esq., M.D.

1330. A Heart, showing a probably congenital union of the margins of the two cusps of the mitral valve, leaving an opening nearly as large as a threepenny piece between the two cusps. Projecting into this opening and forming its outer boundary, is a small cusp which appears to be an exaggeration of the minute cusps found between the large cusps of the mitral and tricuspid valves. The bond of union between the cusps is thin and membranous, except at the margin of the opening, where it is thick and strengthened by fibrous tissue. Chordæ tendineæ are attached all around the margin of the interval between the cusps. A small tuft of vegetation is attached to the minute cusp described above: a vegetation is also attached to the margin of the opening formed by the aortic cusp.

For other specimens of Disease of the Mitral Valve, see Nos. 1258, 1259, 1298, 1299, 1300, 1302, 1304, 1307, 1310 *to* 1315, 1319, 1339, 1342, 1357, 1358, 1362.

DISEASE OF THE AORTIC VALVES.

1331. A Heart, exhibiting numerous warty masses of brown firm fibrin on the aortic valves. Behind one of the valves the aorta is dilated into a pouch, and its inner membrane is here ulcerated. There are but two valves; both are of unusually large size, thick, opaque, and somewhat re-curved. XII. 17

From a man aged 25 years.

1332. The commencement of the Aorta and adjacent portion of the left ventricle. To the semilunar valves large and numerous vegetations are attached, some of which are pendulous.

The right femoral artery containing an embolon is preserved in No. 1561.

1333. Aortic Valves, with numerous firm, pale, warty excrescences or *vegetations* attached to their free borders, and to parts of their adjacent surfaces. XII. 20

1334. Aortic Valves, with numerous similar excrescences attached to their surfaces. One of the valves is extensively ulcerated, and is of very large size, comprising the extent of two valves incompletely subdivided. XII. 21

1335. Aortic Valves, in one of which ulceration has destroyed more than half its border of attachment. The ulceration has extended also to the adjacent muscular substance of the heart, and fibrinous deposits are adherent to its rough surface. The aorta appears healthy. XII. 80

1336. Aortic Valves, diseased like those last described, but more extensively. Ulceration has penetrated the adjacent parts of two of the valves, separating them from their attachments, and allowing their continuous free border to hang like a lax cord across the orifice of the aorta. A large piece of one valve, nearly detached by the ulceration, hangs into the ventricle, covered with fibrinous deposits. The ulcer, in its extension from the valves, has penetrated the part of the wall of the aorta, which was beneath and between the attachments of the

angles of the valves. The borders of the ulcer are sharp, abrupt, and jagged, like those of one making quick progress. The remainder of the aorta, and of the valves appears healthy. XII. 81

1337. Part of a Heart, with the beginning of the Aorta and its valves. It is not certain whether there were originally two valves, or whether the appearance now presented be due to ulceration having destroyed the adjacent borders of two valves that were originally single and distinct. In either case ulceration, like that shown in the preceding specimens, has extensively destroyed the valvular substance, as well as its attachment to the base of the ventricle and its free border. A portion of the arch of the aorta, immediately behind the disease of the valves, is dilated in an irregular aneurismal sac. The internal coat of the dilated part appears entire, but slightly thickened and tuberculated. The opening of one of the coronary arteries is just above the dilatation. XII. 82

1338. Part of an Aorta. Ulceration, like that last described, has destroyed part of a valve, thickened and indurated by previous disease, but has not penetrated its free border. The whole inner coat of the aorta for a distance of from an inch to an inch and a half above the valves, is much thickened, opaque-white, and tuberculated. Immediately behind the ulcerated opening through the valve, a small portion of the diseased aorta is dilated into a hemispherical aneurismal pouch. XII. 83

1339. Part of the left side of a Heart, with fibrin deposited on a large portion of both surfaces of the mitral valve, and on the borders and ventricular surface of the aortic valves. The deposits are soft, yellowish, warty, and firmly attached. The valves are opaque and slightly thickened; those of the aorta are also contracted. XII. 69

1340. Extensive disease of the Aortic Valves, which are thickened, adherent amongst themselves, and drawn towards the ventricle. One of the cusps is ulcerated, and, chiefly about the margins of this ulcer, shreds of fibrin hang down into the adjacent cavity. The left ventricle contains an old coagulum, which clings to the posterior surface of the mitral cusps, and to the wall of the cavity leading to the aorta. 43

From the collection of J. R. Farre, Esq., M.D.

1341. A Heart from a child aged 4 years. The aortic valves are opaque and thickened, and their free margins are curled backwards towards the artery. Two of the valves are closely united by their adjacent margins. XII. 52

1342. A Heart exhibiting changes of structure in several of its internal parts. The lining membrane of the right auricle is thickened and opaque, and that of the left auricle has undergone the same changes in a much greater degree. The tricuspid, mitral, and aortic valves are thickened. The mitral valve is hard and rigid, and earthy matter is deposited along its free margin. The free margins of the aortic valves also are very thick, round, and re-curved. The cavity of the left auricle is enlarged, and upon its internal surface, near the appendix, was a mass of fibrin, on the removal of which the membrane beneath was found rough and otherwise changed. Both the ventricles also are enlarged, but their walls are not proportionately thickened. XII. 33

1343. A Heart. One cusp of the aortic valve is much smaller than natural; its original free edge is adherent to the inner coat of the aorta, excepting just opposite the mouth of the coronary artery, so that this cusp was rendered quite useless. The free edges of the other cusps are much thickened and contracted, but not uniformly, so that in both the corpora arantii are displaced. The aortic valve was incompetent. The left ventricle is hypertrophied.

From a woman, aged 45 years, who died suddenly.—See *Post Mortem Book*, vol. iii, case 371.

1344. Portion of the Heart of an adult. The mitral valve and its tendinous cords are greatly thickened, opaque, shortened, and nearly rigid. The aortic valves are thickened, and united by their adjacent edges, so that only a very small circular aperture was left between them for the passage of the blood. The walls of the left ventricle are of their natural thickness, but the fleshy columns connected with the mitral valve are hypertrophied. XII. 49

1345. Aortic Valves, two in number, thickened and contracted, without material displacement. 40

From the collection of J. R. Farre, Esq., M.D.

1346. An Aortic Valve having only two cusps. These are adherent to their adjacent margins, their tissue is thickened, and in parts converted into a calcareous mass. 37

From the collection of J. R. Farre, Esq., M.D.

1347. An Aortic Valve, with only two cusps, both of which are made completely rigid by thickening and induration of their tissue, and by abundant deposit of earthy matter. One of the masses of earthy matter is cut open: its interior is dark, soft, and broken down, looking like a cavity in a carious tooth. The aortic orifice is reduced to a narrow crescentic fissure between the two valves. XII. 64

Presented by F. H. Colt, Esq.

1348. Part of an Aortic Valve with only two cusps, both of which are thickened, and made rigid by deposits of earthy matter, parts of which project in coarsely granular masses on the arterial surface of the valves. Only a very narrow linear fissure remains between the cusps. XII. 67

1349. Part of an Aorta, of which the orifice is small, and the cusps thickened, opaque, united at their adjacent edges, and all made nearly rigid by deposits of earthy matter in them, and in parts of the arterial walls near their angles. Only a small aperture remains extending from the centre to the wall of the aorta, between the edges of two of the cusps. XII. 66

From an elderly gentleman who had cerebral disease, but manifested no distinct signs of disease of the heart.

1350. Portion of a Heart. The cusps of the aortic valve are adherent to one another, and converted into a hard, unyielding, calcareous ring, which projects into the aortic orifice, reducing it to an opening about three-eighths of an inch in diameter. Calcareous masses, continuous with the calcareous matter in the aortic valves, project on the inferior surface of the inner cusp of the mitral valve. The left ventricle is greatly hypertrophied. The aorta was atheromatous.

From a man aged 43 years.—See *Post Mortem Book*, vol. viii, p. 38.

1350a. Part of an Aorta, with its valves adherent by their margins, thickened, opaque, and made quite rigid by deposits of earthy matter. A narrow central aperture alone remains for the communication of the ventricle with the aorta. XII. 15

1351. Part of a Heart, exhibiting the aortic valves thickened, opaque, and made rigid by the abundant deposit of earthy matter in them. The communication between the ventricle and the aorta is nearly closed by the diseased valves; a mere fissure is left between them, and the narrow nearly linear form of this fissure, as well as the general appearance and form of the valves, indicates

that there are but two instead of three valves. The mitral valve is healthy. The left ventricle is dilated, but the walls are not thickened. XII. 11

1352. Aortic Valves united amongst themselves, displaced, and drawn down towards the ventricle. Their tissue is thickened and studded with nodular calcareous deposits. The aortic orifice is reduced to a narrow permanent chink. 39

From the collection of J. R. Farre, Esq., M.D.

1353. A similar specimen. The diseased aortic valves contrast with the adjacent semilunar valves of the pulmonary artery. 42

From the collection of J. R. Farre, Esq., M.D.

For other specimens of Diseases of the Aortic Valves, see Nos. 1289, 1299, 1301, 1302, 1303, 1305 *to* 1308, 1310, 1311, 1313, 1315, 1319, 1324, 1357, 1358.

VALVULAR ANEURISM.

1354. Heart of a woman, aged 51 years, with aneurism of the mitral valve. The mitral valve is healthy at its attached and free borders, but in the centre of the large (anterior) cusp is a circular aperture half an inch in diameter, leading into a sac, which projects into the auricle, and is formed by a dilatation of the layer of endocardium on the auricular aspect of the valve. The ventricular layer appears to cease just within the margin of the aperture. The aneurism is of conical shape, seated obliquely on the auricular surface of the valve. The largest side, that next the free border of the valve, is an inch and a quarter in length, the shortest, next the attached border, a quarter of an inch. Its diameter at the base is three-quarters of an inch. At the apex is an aperture about a quarter of an inch in diameter, with an irregular fringed margin. There is a second minute orifice on one side, midway between base and apex. On the side of the auricle, at a part corresponding to the apex of the sac, is a white patch. In the recent state the cavity was filled with coagula, partly dark and soft, partly firm and laminated. Both apertures, but especially the auricular, were fringed with fibrous vegetations. The free border of the aortic valves is slightly thickened, and in one of them is a small round aperture almost in the situation of the central fibrous nodule. The heart weighed 13 ounces.

The woman had enjoyed good health until ten months before death, when she had a severe attack of rheumatic fever. For the last two months only of her life she suffered from symptoms of disease of the heart, such as dypsnœa, lividity of surface, and anasarca. There was a harsh systolic murmur at the apex and at the angle of the left scapula.

1355. A Mitral Valve, with some of the adjacent parts. The substance of the valve is generally somewhat thickened, and the middle of its left portion has been distended into a small bilocular pouch, like an aneurism. The pouch projects into the cavity of the left auricle; it is about three-quarters of an inch high, and half an inch wide: its orifice on the ventricular surface of the valve is about a quarter of an inch in diameter. It has burst by a large irregular rent in one of its lateral walls. The aortic valves have numerous warty growths on their outer surface and borders, but are otherwise healthy. XII. 62

1356. A Heart, showing an aneurism projecting from the auricular surface of the large flap of the mitral valve. It is about the size of a marble, and has ruptured at the summit, where clots project from the opening.

See *St. Bartholomew's Hospital Reports*, vol. xi, 1875, "*Report from Post Mortem Room.*"

1357. Portion of a Heart. The mitral valve is thickened, the flaps are adherent, and the orifice slit-like. On the inner flap, projecting towards the auricle, there is a small aneurismal sac with very thick walls, which is perforated by

a minute aperture at its summit. On the upper and inner wall of the left auricle a patch of thickened endocardium covered by papillary granulations is seen. The aortic valves are much thickened, adherent to each other, and were incompetent.

From a woman aged 27 years. There were infarcts in the spleen and kidneys.—See *Post Mortem Book*, vol. vii, p. 363.

358. A Heart, showing an aneurism on the inner flap of the mitral valve, projecting towards the auricle. The aortic valve is covered with vegetations and fibrinous deposits.

From a woman aged 53 years.—See *Post Mortem Book*, vol. vii, p. 357.

359. Portion of an Aorta, exhibiting a large oval mass of fibrin mixed with earthy matter upon each of its semilunar valves. Below and behind one of the valves there is a small circumscribed pouch, into which a piece of glass is introduced. It is smoothly lined by a prolongation of the internal lining of the heart. XII. 42

From a girl 18 years old.

Presented by P. C. Delagarde, Esq.

360. Aneurism of the Mitral Valve. The smaller flap of the mitral valve shows on the upper surface a prominence about the size of a horse-bean, due to an aneurismal bulging of the valves. Long vegetations are attached to the free edge.

See also *St. Bartholomew's Hospital Reports*, vol. xi, 1875, "*Report from Post Mortem Room.*"

361. A cusp of a Mitral Valve. On its ventricular aspect there is a circular opening, leading into a small aneurismal pouch, which projects on the opposite surface of the valve.

362. A Heart, showing two aneurismal bulgings projecting from the auricular surface of the large flap of the mitral valve; the larger, rather flattened, is situated near the edge of the flap, close to its apex; the smaller is nearer the centre of the flap. The auricular surface of the small flap is studded with vegetations. The heart is hypertrophied.

From a man aged 37 years, who died of Bright's disease.—See *St. Bartholomew's Hospital Reports*, vol. xii, p. 243.

INJURIES OF THE HEART.

ECCHYMOSIS.

1363. A portion of the Left Ventricle of a child, aged 8 years, who was killed suddenly by a heavy cart falling over and crushing him beneath it. Both surfaces of the ventricle are dotted with small patches of ecchymosis.

RUPTURE.

1364. A Heart, showing a rupture on the posterior surface of the right auricle, an inch and a half in length, extending upwards from the auriculo-ventricular orifice. There is also a small laceration on the posterior surface of the left ventricle, near the apex, which does not penetrate the wall.

From a man who was killed by being squeezed between the buffers of two railway trucks. None of the ribs were fractured. One of the lungs, also ruptured, is preserved in Series XI, No. 1759.

1365. Rupture of the Right Ventricle and Auricle. A large ragged opening is seen in the wall of the right ventricle, near the attachment of the pulmonary

artery. There is a second opening at the posterior surface of the heart, through the wall of the right auricle, just below the vena cava inferior.

The heart was taken from a man, aged 41 years, who fell from a height of fifty feet. The muscular substance of the organ was healthy.

1366. A Heart, in which a partial rupture of the walls of the auricle has taken place. In the posterior part of the right auricle, between the fossa ovalis and inferior vena cava, a rent an inch and a half in length, extends through the auricular septum In the posterior part of the left auricle, between and below the orifices of the pulmonary veins, a rent nearly two inches in length, exists in both the visceral pericardium and the endocardium ; and there is a small aperture between some of the muscular fibres thus exposed, through which a little blood escaped into the pericardial cavity. XII. 74

The patient was 38 years old. His leg was crushed by a heavy weight, and amputation was performed on the following day. He seemed to suffer but little from these shocks, and went on well until the fifth day, when extensive inflammation ensued in the tissues of the thigh. He was much depressed, but his case was not deemed hopeless till the twelfth day. At this time he suddenly became pale and more exhausted, and quickly died. From the time of the injury the pulse was generally feeble and frequent. During the last few days of his life the breathing was oppressed.

A clot of blood, about the size of a half-crown, was loose in the pericardial sac, and a smaller clot lay upon the auricles. Several small effusions of blood existed between the visceral pericardium and the muscular substance of the auricles and ventricles, especially of the former. The texture of the heart appeared quite healthy.

1367. A Heart and large Vessels, with the Trachea, and a portion of the left Lung, from a child 6 years old. An irregular rent extends through the whole length and thickness of the posterior wall of the left ventricle and auricle. A similar laceration extends through the upper part of the anterior wall of the left ventricle, and through the adjacent part of the septum. The left bronchus is torn across near the root of the lung. XII. 54

These injuries were the result of the passage of a heavy wheel over the chest of the child. Some of the ribs were fractured, but the pericardium was not torn. General emphysema was produced by the escape of air from the ruptured bronchus.

1368. A Heart, the left ventricle of which is extensively lacerated.

The specimen was removed from the body of a middle-aged man, who was killed by the Fenian explosion in Clerkenwell in 1867.

1369. Heart of a child, aged 9 years. At the posterior part of the left ventricle is a longitudinal rent about half an inch in extent, the substance of the heart at this point being softened. The rent increases in size towards the cavity of the ventricle.

The patient was run over by a cart and was admitted into the hospital, but no serious symptom occurred until the fifth day after the injury, when she almost suddenly died. The pericardium was found full of blood.

WOUNDS, &c.

1370. Part of the Heart of a lunatic, who destroyed himself by thrusting a needle, about an inch and a quarter in length, through the anterior wall of the left ventricle : death took place four days afterwards. The needle, entering just to the left of the septum, passes obliquely upwards and to the left, and its point enters the cavity of the ventricle through the apex of the anterior fleshy column; its larger end is buried in the substance of the ventricle. The pericardium was thinly covered with lymph, and the muscular substance of the heart was in a state of fatty degeneration, which was most advanced, and attended with softening of texture, in the neighbourhood of the needle. XII. 71

1371. Part of the left Ventricle of a cow, through which an awl was driven at

some time not less than two days before death. The whole thickness of the ventricular wall is pierced; and one end of the awl projects half an inch into the pericardium, the other as far into the cavity of the ventricle. The pericardium was thinly covered with lymph. XII. 72

No external wound was noticed in this case, nor any sign of severe suffering. The cow walked two miles to the slaughter-house, where, on immediately killing her, the injury of the heart was discovered.

Presented by Leopold Fox, Esq.

372. Needle removed from the heart nine days after its insertion. Length 1·9 inch.

For an account of the case see *Transactions of the Medico-Chirurgical Society*, vol. lvi, p. 203, 1873.

Vide No. 1867, Series XV.

DISEASES OF THE BLOOD-VESSELS OF THE HEART.

373. Coronary Arteries from the heart of a man who had been the subject of angina pectoris. Earthy matter is abundantly deposited in the coats of both the arteries, but their canals are free. The alteration was confined to the first division of the coronary arteries; their smaller branches were sound. XII. 48

For other specimens vide Nos. 1249 *and* 1254.

374. Three aneurisms of the Coronary Artery: one is on the upper and front aspect of the right ventricle, near the origin of the pulmonary artery; another near the apex of the heart; and a third may be seen bulging at the upper and back part of the right ventricle. The two former have been opened, and are filled with cotton wool.

From a boy 7 years old. No cause was discoverable, except that there were a few atheromatous patches in the aorta and the mitral valve. There was no valvular disease. The patient died of scarlatinal dropsy, with meningitis and pneumonia.—See *Post Mortem Book*, October 20, 1870, Case 101.

SERIES VIII.

DISEASES AND INJURIES OF ARTERIES.

WOUNDS OF ARTERIES.

1375. The Heart and the commencement of the large arteries of a woman, aged 25, who died under the following circumstances:—She received a blow on the chest, whereby a needle, which fastened her shawl, was driven through the second intercostal space of the right side, in its upper part, close to the border of the sternum, passing between the bone and the internal mammary artery. It penetrated to the extent of about two inches, and was broken off on a level with the skin. No immediate effect was apparent. She came to the Hospital, and the portion of the needle which appeared firmly fixed, was extracted. When the broken end was exposed by a small incision, it was observed to move slightly with the heart's action. She was with difficulty persuaded to remain. In less than an hour she became very faint. The faintness rapidly increased, and she soon died. On post-mortem examination the pericardium was found distended with blood, which had separated into clot and serum, the former completely investing the heart. The blood effused amounted to nearly a pint. In the wall of the aorta is seen a minute aperture (through which the portion of the needle is passed), and near to it are two other smaller wounds, only one of which appeared to have completely perforated the wall. They are just below the point where the pericardium is reflected, the opposite portion of which presented a corresponding aperture. No other injury could be detected.

XII. 97

1376. The arch of the Aorta, with its large branches. Immediately beyond the origin of the left subclavian, the aorta presents a ragged laceration, involving more than half its circumference. The specimen was removed from the body of a middle-aged man, who, after eating some fish, complained of constant pain behind the first bone of the sternum, and every day spat up blood, which was for the most part of a bright red, but sometimes of a dark colour. He also passed a large quantity of dark clotted blood by the anus, and died from exhaustion. At the post mortem examination a sharp lance-shaped fish bone was found transfixing both the œsophagus and the arch of the aorta. It was evident that the lacerated wound of the latter had been produced by the movement of the vessel as it pulsated upon the point of the bone.

1377. A common Carotid Artery, into which the smaller end of a tobacco-pipe was driven a few days before death. At the upper part of the preparation is shown a portion of a sloughing cavity, in which the wounded part of the artery is involved, and from which the external and internal carotid arteries

proceed. Below this part the canal of the artery is filled by a large dry clot extending from the wound to a ligature placed around the trunk of the common carotid. Below the ligature a similar clot fills the trunk to within half an inch of the division of the arteria innominata. XIII. 116

The patient was a young man. The tobacco pipe was accidentally driven through the tonsil into the artery at the angle of its bifurcation. He supposed that he had completely withdrawn it; but a portion of the pipe, an inch long, remained in the wound, closing the orifice which it had made in the artery, and preventing hæmorrhage. Extensive suppuration followed, in the course of which hæmorrhage ensued. The trunk of the artery was tied seven days after the accident; but hæmorrhage recurred twice, and the patient died four days and a half after the application of the ligature. The case is related by Mr. Vincent, in the *Medico-Chirurgical Transactions*, vol. xxix. London, 1846.

Vide No. 1405.

1378. An Anterior Tibial Artery, in which a small lacerated aperture, completely penetrating its coats, was made by the sharp end of a fragment of bone in a case of compound fracture. XIII. 49

Amputation was made necessary by the hæmorrhage.

1379. A Posterior Tibial Artery and Vein, which were wounded a few days before death. The wound is transverse, and extends through only one side of each vessel. The clot of blood seen in the preparation was found adhering to both vessels: the regularly circumscribed cavity in it was situated exactly over the wound of the vessels. XIII. 65

1380. Arteries of a Leg, with portions of the surrounding Muscles, from a man in whom the peroneal artery was penetrated by a knife, which passed transversely into the back of the leg from the inner side. The track of the wound into the peroneal artery is shown by the piece of coloured glass. The peroneal artery is unusually large; the posterior tibial, into which a bristle has been introduced, is very small. The ligature was placed around the posterior tibial in the operation of searching for the wounded peroneal artery. XII. 99

The patient died with delirium tremens a week after the ligature of the posterior tibial. The direction of the wound led to the supposition that the posterior tibial artery was wounded: but the knife had passed in front of it and had not injured it.

Vide No. 1462.

RUPTURE OF ARTERIES.

FROM EXTERNAL VIOLENCE.

1381. The Heart and the arch of the Aorta of a man, aged 38 years, who was knocked down by a railway engine. The aorta is almost completely divided between the innominate and left carotid arteries. The blood which escaped had dissected up the fibrous tissues covering the great vessels, the roots of the lungs, and the front and sides of the parietal pericardium. The man lived for two hours after the accident. XII. 135

1382. An External Iliac Artery, torn completely and straight across. The torn ends of the artery are an inch apart, and are connected by a coagulum of blood. The coats of the artery are not obviously diseased. XIII. 56

The rupture was directly under Poupart's ligament. It occurred in an injury by which the lower part of the femur was fractured.

1383. Portion of a Brachial Artery, which was torn straight across by external violence. XIII. 88

The patient, a gentleman, 69 years old, fell with his arm stretched out. At first he seemed little injured; but pulsation was found to have ceased in the radial and ulnar arteries. In a few hours the arm became enormously swollen and livid, and amputation near the shoulder was performed. The brachial artery sloughed after being tied in the amputation.

Presented by Dr. James Billett.

1384. A Brachial Artery, in which, just above its bifurcation, a division of the internal and middle coats, as complete and regular as that in specimen No. 1392, was produced by a violent crushing of the arm. The external coat remains entire, and there was no external wound. The upper border of the internal and middle coats is simply retracted: the lower border is also incurved, and had closed the canal of the artery. XIII. 119

1385. A similar specimen; but here the artery, previous to the injury, appears to have been diseased, so that its coats were unnaturally fragile. XIII. 120

1386. A Femoral Artery, the inner and middle coats of which were lacerated in a case of compound fracture. The laceration extends transversely round two-thirds of the artery just above the origin of the profunda. The lower extremity of the artery is closed by a ligature which was placed round it a short time before death, when the limb was amputated for the other injuries sustained in the compound fracture. XIII. 64

1387. Portions of a Popliteal Artery and Vein. The artery was completely torn across by a wheel passing over the limb, and its divided extremities are separated to a distance of nearly half an inch. They are widely open. In the upper part of the artery a coagulum is formed, which almost fills its cavity: in the lower part there are only some irregularly shaped portions of fibrin. XIII. 104

FROM THE EFFECTS OF CONTIGUOUS INFLAMMATION.

1388. The arch of an Aorta, with its chief branches, part of the left lung, the larynx, trachea, œsophagus, and other adjacent structures; all being inverted so as to expose the inside of the aorta. The tissues in front of the trachea, and in the upper part of the mediastinum, were condensed around a large collection of pus and blood which extended nearly as low as the root of the left lung, as well as far upwards in the neck by the sides of the trachea and larynx. Part of the boundary of the abscess was formed by the distal portion of the arch of the aorta, by the commencement of its thoracic portion, and by the left subclavian artery. The extent to which these vessels were in contact with the abscess wall is indicated by a thin layer of lymph on their outer surfaces. Half an inch beyond the origin of the left subclavian artery, at the extremity of the convexity of the arch, an obliquely directed rent, a third of an inch in length, extends right through the coats of the artery and into the cavity of the abscess. The edges of the rent are irregular; it is indicated by a piece of tale. The immediately adjacent, as well as all the other parts of the artery, appear quite healthy. XIII. 122

The patient was a boy, 8 years old. The formation of the abscess in the upper part of the anterior mediastinum, and the lower and front part of the neck, appeared due to exposure to cold, about a week previous to the commencement of swelling. He suffered severely with difficulty in breathing, and had some difficulty in swallowing. For four days before his death he discharged large quantities of purulent fluid from the pharynx, into which the abscess opened before the rupture of the aorta. In the last three days he was noisy and excited, and at length he suddenly ejected nearly a pint of arterial blood from his mouth, and, in a few seconds, died.

The upper aperture of the abscess was in the wall of the pharynx, just to the left of the epiglottis; it was circular, and three lines in diameter. It seemed probable that the abscess had also small openings of communication with the œsophagus and the right bronchus.

No other considerable disease existed.

A full history of the case is in the Hospital Reports, vol. ix, p. 73.

Vide Nos. 1439 to 1445.

EFFECTS OF THE APPLICATION OF LIGATURES TO ARTERIES.

DIVISION OF THE INNER COATS.

1389. Part of the Aorta of a Dog, exhibiting the effects of a ligature applied twenty-four hours before death. The inner and middle coats of the artery are

partially divided, and above the seat of the ligature is a conical coagulum, which appears laminated, and is loosely attached to the wall of the artery.
XIII. 6

390. Portion of an Artery, exhibiting the division of its middle and internal coats by three different kinds of ligature, viz., the large round, the small round, and the flat ligature. The ligatures employed were composed of the same materials as those which are tied round the portion of artery by the side of that on which the experiment was made. The small round ligature, which is in the middle, made the cleanest and most complete division of the coats; the division by the flat ligature is uneven, incomplete, and attended by partial separation of the adjacent part of the divided coats. XIII. 39

The experiment was made on a dead artery.

391. A Femoral Artery, the coats of which have abundant earthy deposits in them, and show the effects of a ligature placed round it a few days before death. The ligature was applied at a little distance from the extremity of the artery, and it has divided the inner and middle coats. For two inches above the ligature the artery is filled by coagulum. XIII. 66

392. A Femoral Artery and Vein. They were cut through in an amputation, and the artery was tied eleven hours before death. The preparation shows the division of the internal and middle coats of the artery by the ligature, and the retraction of their divided borders within the adjacent parts of the canal.
XIII. 118

Vide No. 496, Series I.

FORMATION AND ADHESION OF COAGULUM.

393. A left Carotid Artery, with a portion of the arch of the Aorta. A ligature was placed around the carotid artery, in the middle of its course, six weeks before death, and it had been separated without hæmorrhage. A firm cylindrical clot adheres to the inside of the artery, and extends from half an inch below the situation of the ligature downwards to the aorta. A similar clot is continued upwards within the artery, from the situation of the ligature to the origin of a small branch. The extremities of the divided artery from which the ligature separated are soft and pulpy, and there was not in either of them the least adhesion of the opposite sides of the vessel. XIII. 82

The artery was tied in the hope of curing epilepsy in an elderly gentle man, who had found that by compressing his carotids he could avert the epileptic seizure. He died with abscess extending into the mediastinum along the sheath of the carotid and jugular vessels.

394. A right common Carotid Artery, with the ligature surrounding it, the latter having been applied five days before death for the arrest of profuse hæmorrhage from an extensive cancerous ulceration, which occupied the upper part of the neck and the internal maxillary region. Fibrinous, spiral coagula exist above and below the point ligatured. XIII. 136

The patient never rallied from the effect produced by the loss of blood, but became paralyzed and sank gradually.

395. The right common Carotid Artery of a man, tied five days before death. It shows a long conical clot in the lower portion, commencing from the ligature.
XIII. 156

396. Iliac and Femoral Arteries, with an Aneurism at the commencement of the Femoral Artery, for the cure of which the external Iliac was tied. The ligature was applied about half an inch below the division of the common iliac. The upper end of the artery is closed by a small portion of dry clot; its lower end is closed by a conical clot an inch long and closely adherent to its

walls. Between these clots is a substance connecting the extremities of the artery divided by the ligature, which substance appeared, in the recent state, to consist of the remains of the sheath of the artery. From the clot below the situation of the ligature to within a short distance of the sac, the artery is pervious; and from this pervious part the epigastric and circumflex branches arise. Within that part of the artery which is directly above the sac, is a small conical clot completely filling its canal. The coats of the artery appeared healthy throughout. The external iliac vein is pervious to within an inch of the sac; but there it is obliterated. The interior of the portion of the sac which is preserved is irregularly wrinkled and tuberculated, but polished as if lined by a prolongation of the internal coat of the artery. XIII. 27

The patient was a man 35 years old. The aneurism extended from Poupart's ligament nearly to the knee, and almost surrounded the limb. After the ligature of the artery the limb mortified, and the patient died in the third week with symptoms of tetanus. The case is related by Mr. Hodgson in his "Treatise on Diseases of the Arteries and Veins," p. 198, Case XXXV.

1397. The Iliac Arteries of a man whose external iliac artery was tied four days before his death. The ligature was applied just above the origin of the epigastric branch of the artery. Above this place, where now a constriction appears, the whole canal of the artery to the origin of the iliac is filled with a firm, cylindrical blood-clot. Beyond the place of ligature, a smaller conical clot extends, for nearly an inch, along the trunk of the artery. The coats of the artery are thick and rigid, with deposits of fatty and calcareous matter. XIII. 123

The patient, a man 55 years old, was stabbed deeply in the left groin, and lost so large a quantity of blood from the wound, that he "seemed on the point of expiring." On the following day, when he had in some measure recovered from the effects of the loss of blood, no pulsation could be felt in the left femoral artery, till near the middle of the limb; below this part, and in the arteries of the leg, the pulse was very feeble; while in the arteries of the right lower extremity it was distinct. The difference was probably due to the diseased state of the left iliac artery, narrowing its calibre; but, added to the large loss of blood, it seemed to justify the operation for ligature of the main artery. No wound of any large vessel could, however, be found; and it appeared most probable that the bleeding had proceeded from the circumflexa ilii.

The case is related in a Clinical Lecture by Sir Wm. Lawrence, in the *Medical Times and Gazette*, July 2nd, 1853.

1398. The Femoral Artery from the body of a man who died eleven days after amputation at the thigh. Its canal is much contracted and wrinkled transversely. By its side is suspended the clot which it contained, of a deep-red colour, and with its surface furrowed in correspondence with the condition of the arterial coat, giving it an irregularly spiral aspect. XIII. 129

1399. Parts of a Femoral Artery and Vein, from a Stump. The extremity of the artery is open; but its canal is filled to some distance by a coagulum, which adhered firmly to its coats. The extremity of the vein is closed, and there is a deposit of lymph upon its inner surface. XIII. 37

1400. A Femoral Artery and Vein, from a Stump. The coats of the artery are generally thickened. No adhesion of its sides has taken place at the cut extremity; but for some distance higher up its cavity is filled by a coagulum. The extremity of the vein is closed. XIII. 59

1401. The Popliteal, Tibial, and Peroneal Arteries of a man, aged 65 years. They are throughout extensively diseased. The posterior tibial at the operation was cut through by the ligature; a second ligature, including surrounding muscle, was employed. The vessels were filled throughout with firm clots, that in the peroneal being less perfectly formed and lighter in colour than the others.

From a man, aged 65 years—a drunkard—who died after amputation through the lower third of the leg for an injury.

For other specimens, vide Nos. 1377, 1389, 1391, 1402, 1406, 1408, 1413, 1445, 1510, 1539, 1580, *and Series I, No.* 496.

CLOSURE OF THE ENDS OF ARTERIES AFTER LIGATURE.

1402. Parts of a Femoral Artery and Vein from a Stump. The extremity of the artery is closed by a conical clot which extends up the vessel to the origin of the nearest branch. The base of this clot is united to the extremity of the artery. The extremity of the vein is closed by a similar but smaller clot. The coats of the artery and vein are thickened and closely united to the surrounding parts. XIII. 35

1403. Parts of a Femoral Artery and Vein from a Stump. The extremity of the artery is closed by the adhesion of its sides, but there is no clot within it. The extremity of the vein is open, and lymph is deposited upon its internal surface. XIII. 36

1404. Parts of a Femoral Artery and Vein from a Stump. The extremities of both the artery and the vein are closed, and intimately connected with the surrounding tissues. Both of them also have coagula above their closed extremities. XIII. 38

UNION OF DIVIDED ENDS OF ARTERIES LIGATURED IN CONTINUITY.

1405. The left common Carotid Artery, with some of its branches and the greater portion of the corresponding tonsil, from a man aged 24 years. The artery was tied at the part where it is crossed by the Omo-hyoid muscle two months before death on account of hæmorrhage from the tonsil, the result of an operation. The canal is completely obliterated at the point where the artery has been tied. The outer and middle coats of the vessel, for some distance both above and below, are much thickened. The inner coat above the ligature has a natural aspect, but below it appears to have been partially destroyed. Beyond the ligature to its point of bifurcation the canal is occupied by a mottled, softening clot; below it was filled with loose shreds of fibrin, fluid blood, and dark coagula. A bristle is passed through a small aperture in the wall which communicated with the external wound, not completely closed, and from which slight hæmorrhage occurred four days before death. Twenty-four hours before death the patient became hemiplegic and comatose. In the left hemisphere several portions of the brain were softened and diffluent. No branch of unusual size could be traced into the tonsil, which presented a natural appearance. XIII. 145

1406. Portion of an Aorta with the External Iliac, Femoral, and Popliteal Arteries. There was an aneurism of the popliteal artery, on account of which the femoral was tied three weeks before death. The popliteal artery is not dilated, but it presents a large aperture in its coats, apparently the result of ulceration in the situation over which the aneurism was seated. A ligature was placed around the femoral artery an inch and a half below the origin of the profunda, and had separated before death. A firm cylindrical coagulum fills the artery between the situation of the ligature and the orifice of the profunda. The divided ends of the artery are united by dense fibrous tissue, but are not closed. Between the ligature and the aperture in the popliteal artery there are several small deposits of soft yellow substance in the coats of the artery; these increase in the lower part of the artery; the whole of its internal coat also is transversely wrinkled. XIII. 86

Presented by J. G. Perry, Esq.

OBLITERATION OF A PORTION OF AN ARTERY AFTER LIGATURE IN CONTINUITY.

1407. The Femoral and Popliteal Arteries, with a Popliteal Aneurism. The femoral artery was tied by the edge of the sartorius muscle eighteen months before death, and the aneurism was diminishing at the time of the patient's death. The femoral artery is completely obliterated from the situation at which the ligature was applied to the origin of the profunda. An inch and a half of the length of this part of the artery is replaced by a solid round cord of tough fibro-cellular tissue. Between the cord and the origin of the profunda is a firm, dry, rust-coloured clot of blood, filling and adhering to the coats of the artery. Below the cord is a similar clot half an inch in length, the lower end of which is continued into a milk-white thin layer, like the buffy coat of a clot of blood, which lines the whole length of the rest of the artery down to the aneurismal sac, and is, in its course, connected with three other decolorised clots closely attached to the arterial walls. Part of this layer has been reflected: the rest was too intimately adherent to the artery to be separated without tearing it: the coats of the part of the artery which it lines appear healthy. The mouth of the aneurismal sac is very long and narrow; both it and the whole cavity of the sac are filled by firm, dry, laminated coagulum. The walls of the sac are thick and tuberculated: they appear to have been formed by dilatation of about one-third of the circumference of a portion of the artery an inch and a half in length. XIII. 114

The patient was a man between 50 and 60 years old. He died with aneurism of the arch of the aorta, and abscess of the lung.

1408. A Femoral Artery, upon which a ligature was placed a considerable time before death. The canal of the artery above and below the obliterated part is gradually contracted into a conical form as it approaches that part. The upper and lower portions of the vessel are connected by condensed fibrous tissue. For some way above and below the obliterated part, the coats of the artery are thickened, and in the upper portion a dry clot of blood is firmly adherent to the walls. XIII. 23

Vide No. 1411.
Obliteration of an Artery from Pressure, Vide No. 345, *Series III.*

FORMATION OF THE COLLATERAL CIRCULATION AFTER LIGATURE, OR DIVISION OF AN ARTERY.

1409. A Thorax, with the principal Arteries injected, from a man in whom the left subclavian artery was tied on the first rib six years before death. The portion of the artery between the situation of the ligature and the axilla is in No. 2562, Series XXXII. The circulation was maintained chiefly through the enlargement of the supra- and sub-scapular arteries. F. 1

(In Case D.)

1410. A Fore-arm, exhibiting the anastomosis and enlargement of Arteries consequent on division of the radial a little above the wrist. The principal anastomosis is effected by a large artery passing from the interosseous, at the lower edge of the pronator-quadratus muscle, across the front of the radius, to the radial artery about half an inch beyond the point of its division. F. 2

(In Case D.)

1411. A Limb in which the Femoral Artery was tied in the middle of the thigh, eleven years before death, for the cure of a popliteal aneurism. The portion of artery obliterated by the ligature is about two inches in length, and extends to the origin of the profunda. Below this obliteration the artery was found open, but contracted, to its entrance into the ham where the aneurism was situated. The injection of the vessels displays the collateral branches by which the circu-

lation was maintained; these are situated chiefly at the back of the thigh and close upon the femur. F. 3

(In Case D.)

1412. A Foot, exhibiting enlargement and tortuosity of the tarsal and metatarsal branches of the anterior tibial artery, in consequence of obliteration of its trunk near the ankle-joint. XIII. 76

FAILURE OF THE NORMAL PROCESS OF CLOSURE OF ARTERIES FROM DISEASE.

1413. A Femoral Artery, from a Stump. Its coats are thickened, and earthy matter is abundantly deposited in them. In consequence of the occurrence of hæmorrhage after the amputation, a second ligature was placed around the artery, about two inches above its extremity. This ligature had separated before death; and a portion of whalebone is passed into the aperture through which it was withdrawn. The cavity of the artery, above and below the situation of this ligature, is filled by partially decolorised blood clot, which extends to a considerable distance up the vessel. The cut end of the artery is open. XIII. 40

For other specimens, vide Nos. 1463, 1512, 1543, 1546.

RE-LIGATION OF ARTERIES FOR SECONDARY HÆMORRHAGE AFTER LIGATURE IN CONTINUITY.

1414. The Femoral Vessels from the right Scarpa's Triangle, showing the point where the artery was ligatured for a popliteal aneurism, and subsequently, above and below the first ligature, for secondary hæmorrhage. The wound had healed on the surface; the two ligatures placed upon the artery for secondary hæmorrhage protruded through two small fistulous tracks. On cutting through the scar a small abscess cavity containing ichorous pus was found lying over the vessels; through this cavity the ligatures passed. Between the two ligatures the artery is contracted, and its walls are thickened and infiltrated; the intima is soft and friable, and the vessel here contains no clot. In the centre of this portion of the vessel, the point where the first ligature was applied is seen; the artery was here divided when the other ligatures were applied, but has since united. Above the upper ligature the vessel contains a clot about one inch and a quarter long, which diminishes in size towards its upper extremity. The part of the clot immediately above the ligature is pale and adherent to the wall of the vessel; the remainder of the clot is very loosely adherent, friable, and not decolorised. Below the distal ligature there is a small clot about a quarter of an inch long, which is less adherent and more friable; a fine filament extends from its apex some distance along the vessel. The lining of the vein is stained; its canal was patent. A clot partially fills the upper third; it is moderately firmly adherent to the vessel, partially decolorised, and its rounded lower extremity is situated behind the cusp of a valve: a similar though much smaller clot about a quarter of an inch long, extends upwards from the valve next below: at this point a large vein, which is filled by a clot, opens into the femoral vein; the conical end of this clot projects slightly into the lumen of the vessel. No injury appears to have been done to the vein in the passage of the aneurism needle.

The specimen was taken from a man, aged 48 years, who was admitted to the Hospital with a popliteal aneurism, which had existed seven months. He had been treated in a provincial hospital, where after the application of pressure to the femoral artery, the aneurism solidified, but pulsation returned soon after the discontinuance of the treatment. The aneurism again solidified after the employment of the same treatment, but as before the clot melted away and pulsation returned. The femoral artery was then ligatured, and the aneurism consolidated. One month after the operation, secondary hæmorrhage commenced beneath the scar of the wound, which had closed around the ligature. The wound was laid open, and the vessel again ligatured above and below the first ligature.

The patient died of pyæmia a fortnight after this operation. In the first operation a carbolized silk ligature was used, the ends of which were cut short, and the wound then closed.—See *Henry Ward Book*, vol. vi, p. 258.

LIGATURE OF PARTICULAR ARTERIES IN CONTINUITY.

1415. Right Common Iliac Artery tied on account of hæmorrhage from a branch of the internal iliac artery.

Common Carotid Artery :—*Nos.* 1393, 1394, 1395, 1495, 1509, 1510.
Subclavian Artery :—*Nos.* 1452, 1512, 1515.
External Iliac Artery :—*Nos.* 1396, 1397, 1441, 1445, 1539, 1540, 1551, *and Series I, No.* 496.
Femoral Artery :—*Nos.* 1406, 1407, 1408, 1411, 1414, 1442, 1463, 1542*a*, 1543, 1546.
Posterior Tibial Artery :—*No.* 1380.

CHANGES IN LIGATURES APPLIED TO ARTERIES.

1416. Femoral Artery and Vein from the stump of a thigh amputated through its middle, eighteen days before death. They were tied with carbolised catgut. The ligatures were cut short. No trace of them could be found on dissection. The vessels were occluded by a firm plug of clot. There had been no hæmorrhage.

See *Lawrence Ward Book*, vol. iii, p. 33–222.

1417. A silk ligature applied to the Subclavian Artery in the third part of its course, for a large axillary aneurism. It came away with the attached slough on the twentieth day after the operation. XIII. 155

DISEASES OF ARTERIES.

ATHEROMA, &c.

DEPOSIT OF GELATINOUS OR FATTY MATTER IN THE INNER COAT.

1418. Portion of a Carotid Artery, with its external and internal branches. Just above the division, the cavity of the internal carotid is slightly dilated, and its internal coat is thickened, opaque, white on its surface, and the seat of an abundant deposit of soft, probably fatty matter in the deeper part of its thickened substance. XIII. 44

For other specimens, see Nos. 1425, 1447, 1448, 1450, 1473, 1486, 1504, 1506, 1509, 1510, 1519, 1547.

DEPOSIT OF CALCAREOUS MATTER.

1419. Portion of an Abdominal Aorta. Earthy matter is deposited in its coats in such quantity that it forms a complete tube, which is in some parts half a line in thickness. XIII. 30

1420. Portion of an Abdominal Aorta, with large nodulated and granular masses of earthy matter attached to its internal surface. Around these deposits the inner membrane is thickened and opaque, and the bases of some of them are fixed on thin circular plates of earthy matter. XIII. 73

Presented by William Gillard, Esq.

1421. Portion of an Abdominal Aorta, dilated and exhibiting deposits of large masses of earthy matter on its internal surface. XIII. 74

1422. Cerebral Arteries, in the coats of which earthy matter is deposited. VI. 28

1423. The arteries forming the Circle of Willis, with their primary branches. At various points their walls have been thickened by atheromatous deposits, and, especially along the posterior cerebral, and at the bifurcation of the carotid, these are so considerable as almost to close the canal of the arteries. The brain retained its natural appearance. VI. 76

The patient died from enteric fever.

1424. Arteries from the base of a Brain, the seat of extensive atheromatous disease. 57

From the collection of J. R. Farre, Esq., M.D.

For other specimens, vide Nos. 1413, 1426, 1429, 1447, 1538, 1553, 1554, 1571*a*.

EXFOLIATION AND BREAKING DOWN OF THE INNER COAT (Atheromatous Ulcer).

1425. An Aorta, exhibiting extensive and large circular ulcerations of its inner coat, with deposits of soft and earthy substance in its thickened tissue, and between it and the middle coat. XIII. 72

1426. A Thoracic Aorta, exhibiting an abundant deposit of earthy matter in its coats. The earthy matter forms, in many places, thin, round, and oval plates, some of which lie uncovered on the inner surface of the artery, while beneath others, shallow cavities are shown filled with soft grumous yellowish substance. XIII. 1

1427. Portion of an Aorta, in which a great quantity of atheromatous material is deposited beneath the lining coat. In places this has been converted into calcareous plates. Elsewhere it has softened, and the inner membrane having given way, irregular, and, as it were, worm-eaten cavities have resulted. These were filled partly by broken-down atheromatous material, and partly by shreds of fibrin, probably deposited from the blood. Below the upper of the two cavities is a minute crack where the inner coat has given way over some deposit, into which a bristle is introduced. 48

From the collection of J. R. Farre, Esq., M.D.

1428. Portion of an Abdominal Aorta, in the coats of which there is abundant deposit of atheromatous material, with ulceration over the principal deposits. Between the renal and inferior mesenteric arteries the ulceration has extended through the inner and middle coats of the aorta to its outer coat, which is dilated into a small pouch. XIII. 45

1429. The Abdominal portion of an Aorta, with the Iliac Arteries, from an aged man. There is abundant deposit of both soft substance and earthy matter in the coats of all the arteries; and in the inner coat there are large irregular patches of ulceration. The aorta exhibits a partial dilatation just above the bifurcation. The common iliac and the internal iliac arteries, in addition to the above described alterations in their coats, are dilated into distinct pouches. XIII. 94

Vide Nos. 1322, 1473, 1545.

DEPOSIT OF FIBRIN UPON ATHEROMATOUS PATCHES.

1430. The Arch of an Aorta, exhibiting numerous deposits of soft and earthy matter in its coats, and a mass of fibrin, about the size of half a walnut, so closely adherent to the inner surface of the artery as to present the appearance of a growth from it. No other fibrin was deposited in the artery. XIII. 60

From a man, 38 years old, who died with phthisis.

1431. Fibrin deposited upon the rough surface of an atheromatous aorta. That next to the arterial wall is of a pale fawn-colour, whilst that more superficial is of the deep crimson hue of recently coagulated blood. XIII. 134

1432. An Abdominal Aorta, the seat of atheromatous disease. In the upper part of the preparation there is a small plate which has undergone calcareous degeneration. By the side of this is a firm, decolorised clot, which clung firmly to the wall of the vessel. Below, it fitted into a fissure formed between the inner and middle coats. The lining coat is here partially detached, the detached portion being thickened by a deposit of atheroma. 45

From the collection of J. R. Farre, Esq., M.D.

1433. A similar preparation. The clot which has formed upon the diseased arterial wall is seated at the origin of the common iliac arteries. Its chief extension is into the vessel of the left side, which it completely occluded. A lesser coagulum occupies the right iliac, but a narrow channel remained for the passage of blood. The position of this passage is indicated by the roughened surface of the portion of clot over which the blood-stream had flowed. 46

From the collection of J. R. Farre, Esq., M.D.

Vide No. 1450.

PRIMARY CALCAREOUS DEGENERATION.

1434. A Femoral Artery, the coats of which are made completely rigid by deposits of calcareous substance. The deposits form a nearly uniform tube, in which, however, traces of an annular arrangement may be observed. XIII. 80

1435. The Tibial, and Peroneal Arteries, in the coats of which there is an abundant deposit of calcareous matter. XIII. 92

From an aged man, in whom mortification of the toes spontaneously occurred.

1436. Portions of the Femoral, Popliteal, Tibial, and Peroneal Arteries, the coats of which, by the abundant deposit of calcareous matter in them, form rigid bone-like tubes. The greater part of the deposit is in the form of narrow rings round the artery. XIII. 13

437. The Popliteal and Tibial Arteries, exhibiting abundant deposits of calcareous matter in their coats. In some situations, especially in the posterior tibial artery, the earthy matter occupies the whole circumference of the vessel. Its general arrangement is in narrow rings. XIII. 89

From an aged man, in whom gangrene of the toes occurred spontaneously a short time before death.

1438. An Artery, with an abundant deposit of calcareous matter in its coats, converting it into a rigid tube. 58

From the collection of J. R. Farre, Esq., M.D.

Vide Nos. 1391, 1571.

ULCERATION EXTENDING INTO ARTERIES FROM ABSCESSES, etc.

1439. A portion of the Abdominal Aorta and the adjacent soft parts. The vessel is laid open along its front aspect. In its posterior wall is an orifice four lines in diameter, filled with granular coagulum. On the opposite side of the specimen it may be seen that this coagulum is a portion of a mass as large as a hen's egg, occupying a cavity behind the aorta, and bounded by condensed areolar tissue.

The patient from whom the specimen was taken was a man, aged 28 years, who was admitted into the Hospital with a large psoas abscess and acute bronchitis. He died in three days.

On examination the abscess was found distended with a mixture of pus, and in large amount, recently effused blood. The sac of the abscess communicated with the aorta, but, as may be seen, the orifice connecting them was in great part closed by coagulum. The abscess was associated with caries of the last dorsal and first lumbar vertebræ.—*Abernethy Ward Book*, vol. i, p. 80.

1440. The Arch of an Aorta, and the large vessels arising from it. The inner wall of a cavity formed of condensed connective tissue is seen; the cavity extended along the left side of the neck from the clavicle to the level of the cricoid cartilage, and beneath the sterno-mastoid muscle. The ragged ends of the left common carotid artery project into the cavity above and below; they are separated from each other one and a half to two inches. Corresponding portions of the internal jugular vein and pneumogastric nerve, where they passed through the cavity, are destroyed. The orifices of the vessels are filled

with clot. The left subclavian and left brachio-cephalic veins are obliterated where they lie in contact with the wall of the cavity.

From a man, aged 31 years, who was said to have had a swelling on the left side of the neck for two years. Three days before his admission to the Hospital there was bleeding from an opening in the neck, which was controlled by pads.

On admission, after the removal of the pads, a gush of blood took place from an opening at the lower part of the left side of the neck.

The cavity with which the opening communicated was exposed by an incision, and—as the bleeding vessel could not be secured—it was plugged with lint soaked in perchloride of iron. The patient died on the fourth day after the operation, but the bleeding did not recur. The vessels were probably ulcerated through by the formation of a chronic glandular abscess in the neck.—See *Abernethy Ward Book*, vol. vi, p. 263.

1441. The external Iliac and Femoral Vessels of the right side. A mass of indurated tissue containing enlarged lymphatic glands is seen surrounding the femoral vessels. In the middle of this mass is an abscess cavity, through which the femoral artery and vein pass. In the recent state it was large enough to contain a small orange, and was filled with blood clot, which was firm and laminated around the walls. Three openings in the integument covering Scarpa's triangle led into the abscess. The distal end of the femoral vein opens abruptly into the abscess cavity: a glass rod is placed within it. About an inch of this vessel is completely destroyed. The proximal end is filled by a firm blood clot, which extends three or four inches up the vessel. No blood clot was found in the distal end. A small vertical opening with ragged edges is seen on the inner side of the femoral artery where it lay in contact with the abscess cavity. There is also a linear opening about two lines long below this. The external coat is dissected up from that portion of the vessel which lies within the abscess cavity. A silk ligature is seen around the external iliac artery half an inch above the origin of the epigastric and circumflex iliac arteries.

The specimen was taken from a man, aged 36. In March he contracted gonorrhœa; a slight indolent swelling of the glands in the right groin occurred, and, although the discharge ceased in a few weeks, the glandular enlargement remained. In November an abscess formed, and discharged itself. On the 29th of this month hæmorrhage occurred from one of the openings communicating with the abscess cavity. The bleeding recurred almost daily until December 4th, when he was admitted to the Hospital. There was an ill-defined swelling in the right Scarpa's triangle, which was found to have distensile pulsation and a systolic bruit. Three ulcerated openings over the swelling were filled with blood. On the night of December 5th a gush of dark blood, which escaped in jets, took place from one of the openings. The external iliac artery was shortly after ligatured. The patient showed no signs of rallying, and died next morning.—See *Abernethy Ward Book*, vol. v, p. 87.

This, and the case from which the preceding specimen, No. 1440, was taken, are described by Mr. Savory, in the *Transactions of the Medico-Chirurgical Society*, vol. lxiv, 1881.

1442. A Femoral Artery and Vein, which were exposed and partly destroyed in the progress of a phagedænic ulcer. The coats of the artery, to the extent of about an inch, are completely disorganised, and two small ragged openings are visible in this portion of the vessel. Above this part of the artery a circular indentation in its walls may be perceived, which was occasioned by a ligature placed around it in consequence of hæmorrhage from the openings just mentioned. A portion of the vein is obliterated, and its cavity below the obliterated part is filled by a clot of blood. XIII. 61

The disease extended from the labia of a woman, and had destroyed a large portion of the perineum before it reached the groin.

1443. The left Femoral Artery and Vein of a girl, aged 18 years, who died from hæmorrhage. The preparation shows an ulcerated opening of some size in the front part of the femoral artery, where it lies in Scarpa's triangle. The artery at this point is quite separated from its sheath. There are two smaller openings in the adjacent portion of the femoral vein. Both artery and vein lay in a

sinus, which communicated with the cavity of a gland excavated by ulceration. A portion of the gland may be seen in the preparation.

1444. Femoral Vessels in Scarpa's Triangle and adjacent parts, from a male, aged 18 years, admitted into the Hospital October 16th, 1868. He was then suffering from a small ulcerated and sloughing bubo in the left groin below Poupart's ligament. From time to time there was slight venous oozing from the groin, but not sufficient at first to excite any apprehension. About November 28th the venous bleeding became more considerable, and on two occasions was severe. On December 8th a gush of blood came from the wound, and a second bleeding followed on the 9th, after which the boy sank rapidly and died. The preparation shows that the ulcerative process has extended into the femoral vein, destroying about one inch of its length. Just where the common femoral artery divides into its deep and superficial branches, a circular opening about two lines in diameter leads into its canal, and from this the fatal bleedings no doubt proceeded.

1445. External Iliac, Femoral and Profunda Arteries. A small clot occupies the first-named vessel above the point at which a ligature had been applied. The profunda exhibits a small ulcerated aperture, through which a bristle is passed. These appearances are connected with the following history. XIII. 154

The patient, a man, aged 35 years, noticed one day a considerable and somewhat painful swelling on the upper part of the left thigh, which from this time increased steadily in size. The tumour, of a doubtful character throughout, was associated with occasional absence of pulsation in the tibial arteries. After an exploratory puncture some dark fluid blood escaped; and, in the belief that it was a blood-tumour connected with some diseased and ruptured artery (the correctness of which opinion was decided by the post-mortem examination), a ligature was placed round the external iliac artery on the twenty-sixth day. Fœtid decomposition of the tumour-contents ensued, and the patient, falling into a typhoid condition, died on the thirty-first day.

Vide No. 1388, also Nos. 1791 and 1801 in Series XII.

GENERAL DILATATION OF ARTERIES.

1446. The Arch and Thoracic portion of an Aorta uniformly dilated. The coats of the artery are generally thickened and indurated. Earthy matter is deposited in them, and their inner surface is irregularly tuberculated, and appears ulcerated at many points. XIII. 8

1447. The Arch of an Aorta, with the Carotid and Subclavian Arteries, all generally and almost uniformly dilated, and having earthy and soft matter deposited in their coats. XIII. 85

1448. A Heart, with the large Vessels attached to it, exhibiting a general dilatation of the Pulmonary Artery with a diseased state of its coats. Beneath the lining membrane of the artery there is a deposit of a white and soft substance, giving to the internal surface of the vessel a tuberculated appearance, which is especially marked in the right branch of the artery. The trunk of the pulmonary artery, from the valves to the bifurcation, is uniformly dilated; but its coats appear nearly healthy. Both the right and left pulmonary arteries are dilated; and in one of the divisions of the left artery, which is more dilated than the rest, there is a deposit of firm fibrin, nearly filling the cavity of the dilated part. One of the divisions of the right pulmonary artery was in a similar state. The cavity of the right ventricle is dilated, and its walls are thickened. Beneath the lining of the aorta is a deposit of the same kind as that in the pulmonary artery, but less abundant. XIII. 90

The patient was a woman 53 years old. She had emphysema of the lungs, and chronic bronchitis, the signs of which concealed in great measure those of the disease of the pulmonary artery.

1449. Subclavian and Axillary Arteries. The coats of the vessel, especially the inner, are thickened; and its cavity is generally dilated. XIII. 57

For other specimens, vide Nos. 1418, 1420, 1421, 1425, 1429, 1477.

ANEURISM.

VARIETIES OF

FUSIFORM ANEURISM.

1450. A greatly dilated ascending Aorta. Its inner coat is variously thickened, and its surface roughened or nodulated from the presence of an extensive atheromatous deposit. In addition to the general dilatation, many smaller sacculi give an irregular appearance to the walls. Over some of the rough points seen on the lining membrane, fibrin had been deposited, and projected, shred-like, into the sac; the fibres were easily detached, merely clinging to the surface. The valve has been closed by sutures to indicate how it still sufficed to occlude the aortic orifice in spite of its dilatation, the cusps being stretched and extended to compensate for that change.—See *Hospital Reports*, vol. xvi, p. 45. XIII. 130

1451. A Fusiform Aneurismal Dilatation of the whole length of the ascending portion of the Arch of the Aorta. The remainder of the aorta is smaller than normal, and there is a well-marked constriction at the point where the ductus arteriosus joins the aorta.

The internal mammary arteries were very large.

1452. A Fusiform Aneurism of the left Axillary Artery for which a ligature, seen in the preparation, was applied to the third part of the subclavian artery six days before death.

The patient was a labourer, aged 54 years, who had noticed the tumour below the clavicle for three months.

There was a large aneurism in the chest connected with the thoracic aorta, filled with firm laminated fibrin.

Death occurred from pleuro-pneumonia of the left side.

1453. A Popliteal Artery, of which the whole circumference, in about an inch and a half of its length, is dilated into an aneurismal sac. The coats of the artery, both above and below, as well as at the seat of the aneurismal dilatation, are thickened. XIII. 47

Vide Nos. 1484, 1485, 1511, 1513, 1547.

SACCULATED ANEURISM.

1454. Section of the Arch of an Aorta, with an Aneurism arising from its upper part. The cavity of the sac is nearly filled by laminated coagulum. The internal membrane of the artery is thickened. The trachea is attached to the sac, and its internal membrane is elevated by the pressure of the sac against it. The sac is also closely adherent to the arteria innominata, and to the right carotid and subclavian arteries. XIII. 11

1455. Portion of the Aneurismal Sac last described, removed to show the concentric laminated arrangement of the coagulum contained in it. XIII. 12

1456. Sections of an Abdominal Aorta, with a small Aneurism. The sac is situated between the coats of the artery; its cavity extends on every side of the small mouth by which it opens through the inner coat, and projects very little externally, and is completely filled by laminated coagulum. Above and below the aneurism, earthy matter is deposited in the coats of the artery, and its walls are generally thickened and indurated. XIII. 33

1457. Section of the lower part of an Abdominal Aorta, with an Aneurism formed

by the dilatation and growth of a small portion of its posterior wall. A piece of bougie is introduced into an aperture by which the sac burst. The coats of the aorta, except in the dilated part, appear quite healthy: the interior of the sac is coarsely tuberculated. XIII. 16

1458. Portion of an Abdominal Aorta, exhibiting a large Aneurismal Sac, with a wide oval mouth, projecting from one side of the artery, and formed entirely by the dilatation of its coats. A soft white substance is deposited in irregular patches beneath the inner membrane of both the sac and the arterial walls. XIII. 81

1459. A Femoral Artery, the seat of Aneurism. The sac, occupying the whole inguinal portion of the artery, extends from the origin of the epigastric and circumflex iliac branches to the profunda. It is formed by a dilatation of about half the circumference of a portion of the artery an inch long. The coats of the artery, thickened by deposits of soft substance, opaque, and indurated, may be traced for some way upon the inside of the sac. In the rest of its extent the sac appears to be formed by condensed cellular tissue; and its surface, at its upper part, is covered by thick laminated coagulum. Bristles are introduced into the orifices of the epigastric and circumflex iliac arteries. In the lower part of the sac are two distinct orifices, one leading to the femoral artery, the other to the profunda. The femoral vein, to the extent of two inches, is obliterated by the pressure of the aneurism. Below the obliterated part the vein is laid open to show the clots of fibrin filling its cavity. XIII. 83

1460. Aneurism of the Popliteal Artery. It is situated on the anterior part of the vessel, so that it lay between the latter and the back part of the lower end of the femur. At the upper part of the aneurism, just where it begins to expand from the trunk of the artery, is a small rent.

From a man, aged 46 years, who had suffered from occasional pain in the calf of the leg with slight swelling for many months, but though the limb was several times carefully examined, no aneurism could be detected. At last it was attacked by sudden and acute pain, followed by rapidly increasing swelling and pulsation in the popliteal space. A few days later the limb was amputated through the thigh. The popliteal space and adjacent parts were found distended with blood, which had escaped from the rent pointed out.

For other Specimens of Saccular Aneurism, vide Aneurisms of Particular Arteries, p. 223 et seq.

CONSECUTIVE ANEURISM.

1461. A Popliteal Artery, with a consecutive Aneurism. There appears to have been a complete rupture of the whole circumference of the artery, so that the sac is formed entirely by the surrounding cellular tissue. Above and below the aneurism the artery appears to be healthy; its coats terminate abruptly at the boundaries of the sac. The sac is almost filled by laminated coagulum. The popliteal vein is pervious, but flattened by the pressure of the sac. XIII. 24

Vide Nos. 1509, 1514, 1545.

ANEURISMAL VARIX.

1462. Portion of a left Petrous Bone, with which are connected the left carotid arteries and other adjacent parts. The common carotid artery, laid open from behind, is large, and, with the exception of slight fatty degeneration, is of healthy texture; the internal carotid is normal; the external carotid is large from its origin, and, just after giving off its lingual branch, it becomes thin-walled, much larger, and very tortuous. Its canal, from this point to its final division, is nearly half an inch in diameter and about two inches in length. At the upper part of this, its tortuous and dilated portion, there is an aperture of communication between the external carotid artery and the upper part of the internal jugular vein; the vessels being brought into unnatural proximity at one of the curves of the artery. The aperture (through which a bristle is passed) is oval and nearly

two lines in its chief diameter. Its direction is from above downwards, and from without inwards. Its borders are prominent and thickened towards the canal of the vein, and all the tissues close round it are condensed and indurated; a little further away they all appear healthy. On the wall of the vein, immediately opposite to this aperture, and about three-quarters of an inch below the jugular fossa, a brownish discoloration appears beneath the lining membrane; it is due to the rust of a wedge-shaped piece of iron there imbedded. The piece of iron is exposed, on the other side, by laying open a cavity in which it lies, with all the surrounding tissues closely applied on it, and blackened by its rust and little particles of soil. It is about one-third of an inch in length, and one-quarter of an inch in width at its widest part; its sharper end is directed towards the vein, and is separated from the canal of the vein by the internal coat alone: the pneumogastric, hypoglossal, and spinal accessory nerves are all in close contact with it; it seems, even, to be within the neurolemma of the pneumogastric nerve. The cervical part of the sympathetic nerve is clear from it, but was adherent to the scar-like tissue which enclosed the iron, and in which all the other nerves were almost inseparably imbedded. XIII. 121

The patient was a middle-aged man, and his death was independent of the injury here shown. The injury was received twelve years before death. The piece of iron, broken from the point of a pick-axe, penetrated through the side of the neck. Severe hæmorrhage ensued, but the wound healed without difficulty. A loud whizzing sound, and strong vibration, were always perceptible over the swelling produced by the dilated artery.

VARICOSE ANEURISM.

1463. The External Iliac, Femoral, and Popliteal Arteries, with the femoral and popliteal veins, exhibiting a spontaneous varicose aneurism of the femoral artery and vein, and part of an aneurism of the posterior tibial artery. The upper piece of glass in the lower aneurismal sac is passed through the posterior tibial artery. The two lower pieces of glass are passed through the posterior tibial and peroneal arteries, both of which are continued from the lower part of the aneurism. The aneurism of the femoral artery is situated just before its passage through the tendon of the adductor magnus muscle: it is a small globular sac, formed by dilatation of the whole circumference of the artery. Earthy matter is deposited in the parietes of this aneurism, and it communicates directly with the femoral vein. The interior of the vein presents a rounded opening, with thin and smooth edges, about a quarter of an inch in diameter. Around this opening the vein is closely united to the aneurism, and immediately below it the cavity of the vein is obliterated to the extent of half an inch. A ligature had been placed around the femoral artery about a week before death. Immediately above the ligature is a large irregular opening in the artery, from which fatal hæmorrhage took place. Around this opening, and both above and below the ligature, the whole length of the artery is uniformly dilated to the size of an abdominal aorta, and its coats are very thin. XIII. 91

The patient was a man 47 years old. The aneurism of the posterior tibial artery had probably existed more than four years, that of the femoral artery about two years. The most striking sign of the disease was a peculiar purring thrill which was felt along the whole course of the femoral artery, both during its pulsations and in the intervals between them, but which could be stopped by pressure on the varicose aneurism. Long-continued pressure on this part produced, it was believed, the obliteration of the vein about six months before the patient's death. The ligature was applied to the femoral artery shortly after a sudden increase had taken place in the aneurism of the posterior tibial artery. The patient died with hæmorrhage on the sixth day after the operation. The case is described by Mr. Perry in the *Medico-Chirurgical Transactions*, vol. xx, p. 32. London, 1837.

Presented by J. G. Perry, Esq.

DISSECTING ANEURISM.

1464. Part of a Heart, with the Aorta. A transverse rent extends through the inner and middle coats of the whole circumference of the aorta, about half an

inch above the angles of the valves. The blood, penetrating between the coats at the torn part, has thence extended and separated the layers of the middle coat through a large portion of the arch and thoracic part of the aorta. Where the coats are thus separated the trunks of the intercostal arteries are torn across close to their origins. The inner coat of the artery appears opaque, and, in the thoracic portion, it is tuberculated by deposits of soft matter beneath its surface. The aortic and mitral valves are slightly opaque. The left ventricle of the heart is dilated and hypertrophied. XIII. 110

The patient was a woman about 45 years old. Her pulse was generally strong and full, but she was considered perfectly healthy. As she was carrying two pails of water she suddenly fell down and almost instantly expired. Two pints of blood were found in the pericardium, which had probably escaped through some aperture in the external coat of the aorta, not shown in the preparation.

Presented by H. Page, Esq.

1465. The Base of a Heart, with the Arch and Thoracic portions of the Aorta. About half an inch above the valves there is an oblique rent about an inch long, extending through the inner and part of the middle coat of the aorta. The margins of the rent are soft and ragged. The blood passing through it has extended between the layers of the middle coat of the artery through the whole length and the greater portion of the circumference of the aorta, separating them and tearing across the intercostal and other small arteries. Some of the blood, coagulated, remains in the channel which it has formed for itself between the coats of the artery. The inner and middle coats of the aorta were soft, succulent, and very easily torn in any direction; its internal surface also appears shreddy by the partial detachment of little portions of the inner coat. The aortic valves are healthy, but the heart was generally enlarged. XIII. 111

The patient was a gentleman, 45 years old, who was subject to occasional attacks of rheumatism. While suffering with colic he was seized with syncope, which was shortly followed by signs of internal hæmorrhage, and he died on the fourth day, The pulmonary artery was found to be compressed by the blood effused in the coats of the aorta. There was abundant soft deposit in the coats of the coronary arteries and the pericardium was full of blood.

Presented by Dr. Theophilus Thompson.

1466. The Abdominal Aorta of the same patient, showing the further separation of its coats by the effused blood. The separation extends to the origin of the renal arteries. The inner coat of the artery is more thickened than in the preceding specimen. XIII. 112

1467. Parts of a Heart and Aorta, exhibiting a transverse rent extending round the whole circumference of the inner and middle coats of the aorta, about half an inch above the valves. The characters of this specimen closely resemble those of No. 1464. The torn coats are soft, but in other respects they appear healthy. XIII. 113

The patient was a man about 25 years old. He had delicate health, but was not supposed to have any disease of the heart. He was suddenly seized, while walking, with pain in the chest and faintness, and quickly died.

Presented by Dr. Jeaffreson.

1468. A Heart and adjacent parts, showing a transverse rent through the inner coats of the aorta about one inch above the semilunar valves: the rent extends, with the exception of one inch, completely around the vessel. The external coat is stripped off to some extent from the inner coats, and blood found its way through a small rent into the cavity of the pericardium, which contained two pints of blood-clot. About one-third of an inch above the large rent in the aorta is a small one about half an inch broad. The aorta was elastic and not atheromatous, but the part torn was extremely thin. Two of the cusps of the aortic valve are so completely adherent as to give the appearance of the existence

of but two cusps; they are thickened and studded on their inner surface with calcareous plates. The mitral valves are much thickened, adherent, partially covered by an irregular calcareous mass, and the orifice only admits the tip of one finger. The valves on the right side are normal. The heart is hypertrophied to a moderate degree, and the left auricle is greatly dilated.

The specimen was taken from a man, aged 59 years, who was admitted to the Hospital with symptoms of morbus cordis, from which he had suffered for six months. No history of a "strain" or severe work was obtained. There was a systolic murmur at the apex, a systolic murmur at the base conducted along the large arteries, and a diastolic murmur in the same situation. The patient died suddenly, a few days after his admission.—See *Mark Ward Book*, vol. viii, p. 207, and *Post Mortem Book*, vol. vii, p. 140.

1469. A dissecting Aneurism of an Aorta, which is obliterated at the point where it is joined by the ductus arteriosus. The heart is small but there is considerable concentric hypertrophy of the left ventricle. There are only two cusps to the aortic valve, and the commencement of the aorta is enormously dilated. About half an inch above the semilunar valves is a transverse rent in the inner coats of the aorta about an inch long: a finger inserted through which passes into a large cavity between the outer and middle coats of the artery. The aortic arch gives off four branches, the first and second being the innominate and left carotid; the third a ramifying artery to the neck; the last,—the left subclavian,—arising immediately above the obliteration. The arch and all its branches are dilated and atheromatous. Below the obliterated spot the aorta is at first conical, but soon is expanded to its normal diameter. The intercostal arteries are largely dilated. The ductus arteriosus is ligamentous. A small glass rod has been passed through a valvular opening immediately below the obliteration into a minute canal in the duct, which has been laid open; it did not communicate with the pulmonary artery. The pericardium is turned back with the thymus (which was persistent) still attached. The cavity of the pericardium was found filled with coagulated and fluid blood. There is a vertical rent about half an inch long through the outer coat of the intra-pericardial portion of the aorta, which leads into the cavity between the coats spoken of above, and is almost opposite the rent through the inner coats. The separation of the coats extends almost around the aorta as high as the origin of the innominate. The innominate, right carotid, and subclavian arteries are stained with blood which was extravasated into their sheaths. Both internal mammary arteries were much enlarged.

The parts were taken from a man, aged 20 years, who was brought dead to the Hospital, having been found in the streets by the police.—See *Pathological Society's Transactions*, vol. xxix, p. 65.

ANEURISM OF PARTICULAR ARTERIES.

ANEURISM OF THE ARCH OF THE AORTA.

1470. Aneurismal dilatation of one of the Aortic Sinuses. A piece of glass is placed in the corresponding coronary artery, which is natural.

1471. Heart of a man, aged 32 years, whose right subclavian artery was tied for axillary aneurism (see No. 1515), and who died of pyæmia twenty days after the operation. In each of the sinuses of Valsava, behind the aortic valves, is an aneurismal pouch. The coats of the vessel are uniformly dilated over these pouches, and are very thin.

See *Pathological Society's Transactions*, vol. xxiii, 1872, p. 74.

1472. The commencement of an Aorta. Immediately above the semilunar valves a large aneurismal sac projects from the aorta. It is partially within the pericardium, and compresses the superior vena cava, which is occluded by

a clot. A piece of glass rod is placed in an aperture of communication between the aneurism and the right auricle at the root of the superior vena cava.

From a man aged 44 years.—See *Post Mortem Book*, vol. viii, p. 52.

1473. The commencement of an Aorta, with part of the pulmonary artery and of the right and left ventricles of the heart. The aorta is the seat of extensive atheromatous deposits, and its inner surface is thus rendered rough and uneven. Its canal is irregularly dilated by numerous pouches of varying size. One of these projects into the right ventricle, below the attachment of the pulmonary valves; its position is indicated by the bristle. Opposite this pouch, just above one of the aortic cusps, there is a fissure with uneven flocculent edges, its base formed by the middle coat of the aorta, covered with soft, atheromatous deposits. In the recent state this fissure was filled by a softer, almost pus-like material, which contained a large quantity of free oil. To the right of this fissure is a long crack, extending downwards to the base of the valve; on either side of it the wall of the aorta is thickened and puckered. Above, its edges are undermined; but here, as elsewhere, its surface is covered by a transparent membrane having an imperfectly filamentous structure. XIII. 132

1474. Portion of a Heart and an Aorta. The aorta is generally dilated, and there are two circumscribed dilatations immediately above the valves. The larger, to the right of the specimen, projects into the commencement of the pulmonary artery, one of the valves of which is adherent to the projecting surface.

1475. The Arch of an Aorta, with a broad flat aneurism, which, arising from its anterior wall just above the valves, has compressed, and burst into the pulmonary artery. The internal coat of the aorta is irregularly thickened: the mouth of the sac is round and very wide. XIII. 14

1476. The Arch of an Aorta, with its great branches and the Pulmonary Artery. The whole of the arch is somewhat dilated, and soft matter is deposited in its coats. A small hemispherical aneurismal pouch extends from the aorta just above the right semilunar valve, compresses the pulmonary artery, and communicates with it by an opening, through which a portion of glass is passed. Immediately around this opening the coats of the pulmonary artery are thickened. XIII. 102

1477. The Arch of an Aorta, with the Pulmonary Artery. The aorta is considerably and uniformly dilated in the whole extent of the arch. Its coats are thickened and tuberculated; and, just above one of the semilunar valves there is a small opening which extends through the coats of the aorta into the contiguous portion of the pulmonary artery. There is no greater dilatation of the aorta in the situation of this opening than in any other part. XIII. 87

1478. An Aorta, with an aneurism of the first portion of its arch, which has burst into the pericardium. The sac, which is of an oval form, has extended across the front of the aorta between it and the pulmonary artery, and has compressed the latter. The mouth of the sac is round, and is situated in the front wall of the aorta, just above the aortic valves. A quill is introduced from the sac through the ruptured aperture, above which a portion of the pericardium is reflected from the sac. The internal coat of the aorta is thickened and tuberculated, especially near the margin of the mouth of the aneurismal sac. Fibrin is deposited on the inner surface of the pulmonary artery, where it is pressed upon by the sac. XIII. 2

From a patient 40 years old, who, while apparently in good health, died suddenly after a full meal. The pericardium was distended with coagulated blood.

1479. Part of the Arch of an Aorta, with an aneurism immediately above one of the semilunar valves. The sac, which is about the size of a walnut, extended between the pulmonary artery and the aorta, and burst into the pericardium, through the opening into which a quill is introduced. The internal coat of the aorta at the angles of the other valves, as well as around the mouth of the sac, is thickened, opaque-white, elevated, and tuberculated. XIII. 51

1480. A Heart with the Aorta. An aneurism, the size of a Tangerene orange, projects from the anterior portion of the ascending aorta. It is within the pericardium, which is reflected upwards from the lower part of the sac. The heart is fatty. A blood clot is seen at the root of the aorta.

From a woman, aged 40 years, who died from rupture of the aneurism and leaking of blood into the pericardium. Death did not take place suddenly. The pericardium was full of blood clot.

Presented by Dr. V. D. Harris.

1481. The Base of a Heart, with the large vessels. Two small aneurisms have formed upon the first portion of the arch of the aorta, and project into the pericardium, one above, and the other by the right side of the trunk of the pulmonary artery. Portions of coloured glass are passed from the aorta into both the aneurismal sacs. The lower and larger of them, which opens into the aorta about half an inch above the valves, has been laid open: it is nearly filled by dark laminated fibrinous coagula. The smaller sac is nearly empty. The lining membrane of all the first portion of the aorta is thickened, uneven, and opaque white: small quantities of fatty matter are deposited in and beneath it. The aortic valves are thickened, opaque, rigid, and reduced in breadth. XIII. 106

1482. Part of the Arch of an Aorta, in which there is an appearance as if a portion of the internal coat just above the valves were deficient. The middle and external coats are dilated in a corresponding extent of the walls.

XIII. 3

From a man who died with diabetes. No. 1554 in this Series contains one of his renal arteries.

1483. The Arch of an Aorta, with an Aneurism of its upper part and right side, involving the arteria innominata. A very firm and thick laminated coagulum lines the sac, and has closed the origin of the right subclavian artery. A portion of the coagulum was found detached and almost loose in the cavity of the aorta, as it now appears in the preparation. The trachea is slightly compressed by the aneurism. XIII. 69

The patient, an elderly man, was supposed to have chronic asthma, the signs of which increased to such a degree that the trachea was opened to prevent the suffocation which seemed impending. A large thyroid vein was opened in the operation, and the patient died.

1484. A Heart, with an Aneurism extending from the commencement to the termination of the arch of the aorta. The sac is of immense size; its lower part is formed by the dilated aorta; but at the upper part its walls are apparently formed by condensed cellular tissue, and exhibit small laminated deposits of fibrin upon their inner surface. The front and upper part of the sac has been turned upwards, with three ribs belonging to the right side of the chest, and a part of the sternum, closely attached to it. There is a small fissure, in the side of the sac near its upper part, through which blood escaped into the pleura. The heart is healthy; but the pericardium is generally adherent to it.

XIII. 9

From the same patient as No. 1548.

1485. The Arch of an Aorta, generally and almost uniformly dilated into a large

aneurismal sac. The dilatation begins directly above the valves, and terminates abruptly just beyond the origin of the left subclavian artery. The interior of the sac is very unevenly tuberculated: it contains no coagulum, and has burst into the pulmonary artery. XIII. 15

The patient was a man, 45 years old. While apparently in good health, he was seized with pain in the chest, dyspnœa, and intermittent pulse, and died in eighteen hours.

1486. The Arch of an Aorta, with a very large aneurism projecting through the front of the chest. The aorta is uniformly dilated, except in the formation of the aneurismal sac. The mouth of the aneurism is oval, about an inch and a half in its chief and vertical diameter; its lower border is about three-quarters of an inch above the free edge of the aortic valves; the whole border is smoothly rounded, as if by the eversion of the internal arterial coat; and the adjacent walls of the artery appear not more diseased than are other parts. From this, the mouth of its sac, the aneurism extends nearly straight forwards through a large aperture formed by absorption of the cartilages of the third, fourth, fifth, and sixth ribs, and of the right side of the sternum. The aneurism, quickly enlarging beyond its mouth, is cylindriform, about five and a half inches in diameter, but narrowed at the part included within the aperture in the walls of the chest. A section through the aneurism shows that its walls are from one to two lines in thickness, tough and irregularly laminated; but their component textures cannot be discerned. They are very closely adherent to the tissues bounding the aperture in the walls of the chest, and to a part of the right lung. With the exception of a small part immediately adjacent to its mouth, the whole cavity of the aneurism is filled with tough, and, for the most part, firmly compacted layers of decolorised blood clot. XIII. 124

In October, 1846, the patient, a publican, 47 years old, began to suffer with sharp spasmodic pain in the chest. In the six months following he had cough and mucous expectoration. In May, 1847, a strongly pulsating swelling appeared at the right breast. This gradually enlarged, and in October, 1847, had increased to the extent of destroying parts of the second, third, and fourth ribs on the right side. Other signs of aneurism of the aorta were well marked. The patient kept his bed, and took only small quantities of light food, but the swelling, dyspnœa, venous congestion, and other symptoms still increased. At the end of 1847, however, the disease, apparently, ceased to make progress; the external swelling did not enlarge and slowly became much firmer; its pulsations diminished in force, and, by the end of March, 1848, were hardly perceptible. The patient during this time became pale, emaciated, and very feeble, needing better diet, and stimulants. He had kept his bed for six months, but now moved about in a chair. Improvement still continuing, the tumour became at length pulseless, hard, and incompressible. In this state he lived to the summer of 1852, when, after exposure to excitement and less prudent living, he died with suppurative pleuritis.

The heart was small and flabby; its muscular substance pale and friable; and the walls of both ventricles were scarcely more than half their natural thickness.

Presented by Richard Evans, Esq.

1487. Part of an Aorta, with an Aneurism at the commencement of the Arch. The sac has extended forwards through the sternum and ribs on each side, and, elevating the pectoral muscles, has formed a large tumour upon the chest. A portion of skin attached to the front of the tumour indicates, by its white appearance, that the process of sloughing has commenced in its centre. The sac, in its progress towards the sternum, has extended itself on each side into the lung. A portion of the sac in the right lung is laid open, and is filled by laminated coagulum. On the left side, the ragged surfaces of the sac, and the shreds of coagulum protruding through it, mark the situation in which the aneurism burst into the thoracic cavity. XIII. 39

1488. The Arch of an Aorta, generally dilated and having a large aneurismal sac, formed by a further dilatation of a portion of its anterior wall. The sac extends forwards through the sternum and costal cartilages, and formed a con-

siderable tumour on the front of the chest. There is an abundant deposit of earthy matter in the walls of the artery and in part of the aneurismal sac.
XIII. 10

1489. The Arch of an Aorta, from which two large Aneurisms have arisen. The mouths of the sacs are separated by a portion of the whole circumference of the artery about half an inch in width, above which they communicate by an irregular oval aperture, through which one appears to have burst into the other. Laminated coagulum lines both sacs. The internal surface of the aorta is tuberculated, and has irregular deposits of soft matter between its coats.
XIII. 20

Presented by James Gillman, Esq.

1490. The Arch of an Aorta, exhibiting an aneurism which has burst into the vena cava superior. The aneurism is formed by dilatation of the upper and posterior wall of that portion of the arch which lies between the reflection of the pericardium and the origin of the arteria innominata; its walls comprise all the coats of the artery. On both sides of the aneurismal sac the aorta has its natural size, and its internal coat appears less thickened and tuberculated than where it lines the sac. The vena cava superior is adherent to the exterior of the sac, and there is an aperture of communication between them; immediately around which aperture the vein and the sides of the sac are so much attenuated as to be transparent. XIII. 84

1491. A large Aneurism, of many years' duration, opening by a wide mouth into the dilated ascending Aorta. The mouth of the aneurism and dilated walls of the aorta are calcified to a considerable extent.

From a man, aged 48 years.—*Post Mortem Book*, vol. ii, Case 69.

1492. Aneurism of the Arch of the Aorta. 51

From the collection of J. R. Farre, Esq., M.D.

1493. The Arch of an Aorta, with an Aneurism at its upper and posterior part, between the innominate and left carotid arteries. The sac is in great part filled by coagulum. The internal coat of the artery is generally thickened. The sac has compressed and burst into the trachea by a transverse rent between two of the cartilaginous rings. XIII. 52

1494. The Arch of an Aorta, with a large Aneurism just below the innominate, which has burst into the trachea and œsophagus. The sac is nearly filled by layers of coagulum; and the blood passed between them and the parietes of the sac, in the direction marked by two pieces of whalebone, to the irregular apertures in the trachea and œsophagus through which the aneurism burst. All the arteries arising from the upper part of the arch of the aorta are compressed by the aneurism. XIII. 54

1495. The Arch of an Aorta, an Aneurism of the posterior wall of which, below the brachio-cephalic trunks, has burst into the œsophagus. The internal coat of the artery is much thickened. The main arterial trunks arise from the front of the sac, and are not compressed. XIII. 55

1496. The Arch of an Aorta, with an Aneurism at its upper part. Part of the sac is formed by the dilated artery, the coats of which terminate with an abrupt margin near the middle of the sac. The remaining part of the sac is formed by condensed cellular tissue, and the sternum. Round, deeply impressed pits produced by absorption are visible upon the internal surface of the sternum: and one of these penetrates the bone to its external surface, and leads to an ulcerated aperture in the corresponding portions of the integuments. XIII. 70

1497. The Arch of an Aorta, the seat of an Aneurism, by which the left Subclavian Artery is obliterated. The walls of the sac appear to be formed entirely by the thickened and dilated coats of the artery. At the back of the preparation is the arteria innominata, with the left carotid artery; in the front and lower part is the left subclavian artery, obliterated at its origin by fibrin extending from that which lines a part of the aneurismal sac. There is a wide irregular aperture produced by the rupture of the end of the sac. XIII. 41

1498. Aneurism of the Aorta with obliteration of the left subclavian and vertebral arteries, and dilatation of the arteria innominata. 54

From the collection of J. R. Farre, Esq., M.D.

1499. The Arch of an Aorta, with a small Aneurism arising from its termination. The aneurism has protruded and burst into the left bronchus. The aorta is generally thickened and dilated. XIII. 25

1500. Portion of the Arch of the Aorta with the commencement of the great vessels, and lower portion of the trachea. An aneurismal pouch communicates by a circular aperture, half an inch in diameter, with the aorta just below the origin of the left carotid and subclavian arteries. The sac has perforated the left side of the trachea about half an inch above the commencement of the left bronchus. The orifice is obstructed by a clot. The recurrent laryngeal nerve passes up behind, and is pushed out of its course by the tumour.

From a man, aged 33 years. During life the symptoms were referred to the larynx.

1501. Aneurism of the Aorta. It has burst by two fissured rents into the trachea, about one inch above the bifurcation. The interior of the aneurism is filled with irregularly laminated coagulum. The œsophagus is considerably displaced towards the left side, and, between it and the trachea, part of the aneurismal sac intervenes. XIII. 53

From the collection of J. R. Farre, Esq., M.D.

1502. The Aorta, Œsophagus, and a portion of the Spine. An aneurism springs from the posterior surface of the descending aorta, which has eroded the bodies of the eighth, ninth, and tenth dorsal vertebræ. There is a perforation of the œsophagus, about the size of a sixpence, which is occluded by fibrinous coagulum.

From a man, aged 52 years, who died suddenly while at work.

1503. Part of an Aorta, with an aneurism arising from its descending portion. Its walls, extensively diseased, are irregularly dilated. This preparation shows that the aneurism in its origin consists of a dilatation of all the coats. 49

From the collection of J. R. Farre, Esq., M.D.

For other specimens, vide Nos. 1337, 1338, 1450, 1451, 1454.

ANEURISM OF THE THORACIC AORTA.

1504. Part of an Aorta, with a large Aneurism of the Thoracic Portion. The sac has extended into the bodies of the vertebræ, and has burst by a large sloughing aperture into the œsophagus. The coats of the artery are greatly thickened and generally dilated, and its inner coat is tuberculated with opaque, white, elevated patches. XIII. 58

1505. Aneurism of the Aorta as it passes through the diaphragm. A bristle is inserted into the fissure by which it burst into the mediastinum and injected the cellular tissue around the œsophagus. The clots in the mediastinum are supported by the diaphragm. The vertebræ formed the back of the sac. 56

From the collection of J. R. Farre, Esq., M.D.

INNOMINATE ARTERY.

1506. The Arch of an Aorta with its branches, an aneurism of the arteria innominata, and the adjacent parts. The aorta is scarcely above the natural size: but its internal coat is thickened, opaque, tuberculated, and contains some fatty and calcareous matter. The whole length of the arteria innominata is dilated anteriorly into an aneurism of unequal, rounded shape, from three to four inches in its diameter, thick-walled, and partially filled with firm blood-clot. The right carotid is much narrowed in the first inch of its course, by the compression of the aneurism, and by thickening of its own walls. The undilated posterior wall of the innominate artery is similarly thickened. The pneumogastric trunk and its recurrent branch are closely adherent to the exterior of the aneurismal sac; and the former was much compressed between it and the clavicle. XIII. 125

The patient was 39 years old. He had first noticed the swelling three months before his death.

1507. Part of the Arch of an Aorta, with its large vessels, exhibiting an Aneurism of the Arteria Innominata pressing upon the trachea. The sac appears to be formed by dilatation of the whole circumference of a part of the artery, and contains laminated coagulum, the deposit of which has extended across the orifice of the right carotid artery, so as completely to close it. The canal of the trachea is slightly narrowed by the pressure of the aneurism. XIII. 18

The patient was a girl, aged 20 years. For a fortnight before her death she was subject to paroxysms of dyspnœa, and in one of these she died. The case is related by Mr. Lawrence, in the *Medico-Chirurgical Transactions*, vol. vi, p. 227. London, 1815.

COMMON CAROTID ARTERY.

1508. A Carotid Artery, with a large Aneurism at its division. The sac is globular and completely filled by layers of coagulum loosely connected. A portion of straw is passed through the narrow opening of communication between the sac and the artery. Around the opening the coats of the artery are thickened and rough; below it they appear quite healthy, but the canal of the artery is diminished by the pressure of the aneurism. The external and internal carotid arteries are pervious. The pneumogastric nerve is exposed above and below the aneurism; in the intermediate space it could not be traced on the sac. XIII. 43

1509. The Arch of an Aorta, with the Innominate and right Carotid Arteries. There is an aneurism of the carotid artery, about half an inch below its division, for the cure of which a ligature was applied. A section of the aneurismal sac shows its cavity contracted and filled by layers of coagulum. A portion of straw is passed through the narrow opening of communication between the sac and the artery. The place where the artery was tied is marked by a portion of straw, which is introduced into the channel leading to the artery from which the ligature was withdrawn. Below the situation of the ligature, the artery is filled by a large clot of blood, extending nearly to the division of the innominate. Above the situation of the ligature the coats of the artery are thickened, and lymph is deposited upon its internal surface; a fibrinous adherent clot extends upwards to the division of the carotid into the external and internal branches, both of which are pervious. The coats of the aorta are thickened and tuberculated. XIII. 28

The patient was a man, aged 52 years. The aneurism had been observed for a month, and appeared to be the result of an injury of the neck. He died in the fifth week after the operation, with suppuration in the artery above, and in the tissues round the sac. The case is described by Mr. Vincent, in the *Medico-Chirurgical Transactions*, vol. x, p. 212. London, 1819.

1510. The Arch of an Aorta, with the large Arteries proceeding from it, and an

Aneurism of the right Carotid Artery. The aneurism involves a portion of the common carotid, with the commencement of the external and internal carotid arteries. The sac is filled by firm coagulum. About an inch below the sac, a ligature was placed around the artery, and had not separated at the time of death. Between the ligature and the aneurism, as well as between the ligature and the origin of the subclavian artery, the whole cavity of the carotid is filled by coagulum, which adheres firmly to its sides. The aorta presents a tuberculated appearance upon its internal surface from the thickening of its inner coat and the deposit of soft matter in it. Portions of the pneumogastric and sympathetic nerves are firmly united to the aneurismal sac. The external and internal carotid arteries are closed at the point of their communication with the aneurism, but appear of healthy texture. XIII. 62

SUBCLAVIAN AND AXILLARY ARTERIES.

1511. A Subclavian and Axillary Artery, with part of a very large Aneurismal Sac. The aneurism occupies a part of the subclavian and the whole length of the axillary artery to the commencement of the brachial; but only a small portion of the sac is preserved connecting the two parts of the artery. Bristles are passed into the apertures of communication between the artery and the sac; both of which apertures are small, and smooth. The interior of the sac is tuberculated and wrinkled, but polished as if lined by a continuation of the internal coat of the artery: the axillary nerves are connected with its exterior. The artery is neither changed in structure nor dilated on either side of the aneurism. XIII. 67

1512. The Arch of an Aorta, with the left Subclavian and Axillary Arteries. The left axillary artery is the seat of an aneurism, for the cure of which the subclavian artery has been tied. The upper part of the preparation consists of the left subclavian artery and the arch of the aorta. By tracing the subclavian artery downwards, the situation where it has been tied will be recognised. On the side of the ligature nearest to the heart, the artery is pervious and of its ordinary size to its extremity, which was closed by only a small coagulum. Between this coagulum and the sides of the vessel is an aperture into which a bristle is passed, and through which blood had passed from the artery to the wound. At a short distance above the situation of the ligature, several large branches arise. The portion of artery between the situation of the ligature and the aneurismal sac is completely closed by coagulum. The aneurismal sac also is in great part filled by laminated coagulum: its exterior is firmly attached to three of the ribs which have undergone partial absorption. Below the sac is the remaining part of the axillary, with the commencement of the brachial artery. The axillary artery from the point of its connection with the sac is quite pervious, and a large branch arises from it, which divides into the subscapular and circumflex arteries. The axillary vein is connected with the sac, and is pervious. The coats of the subclavian artery above the situation of the ligature were so brittle that they yielded to the slightest force. XIII. 21

The patient was a man, aged 38 years. The aneurism appeared to have existed four months, and was first observed six months after an attack of acute rheumatism. He died after repeated hæmorrhages, on the thirteenth day from the application of the ligature. The case is described by Mr. Charles Mayo, in the *Medico-Chirurgical Transactions*, vol. xii, p. 12. London, 1823.

Presented by Charles Mayo, Esq.

1513. A Subclavian and Axillary Artery, the seat of Aneurism. The aneurism includes nearly three inches of the artery, and appears to be formed by dilatation of its whole circumference. The brachial plexus of nerves is connected with one side of the sac: and portions of the first and second ribs form part of its boundaries. Only half an inch of the artery intervenes between the aneurism

and the cluster of branches arising from the first portion of the subclavian. For a short distance both above and below the aneurism, the coats of the artery are thickened, and soft, probably fatty matter is deposited in them ; but beyond these portions the arterial wall appears healthy. XIII. 63

1514. A large aneurism of the left Subclavian Artery.

From a man, aged 50 years. It burst into the bronchus of the left lung, and into the left pleura. Hæmoptysis occurred at frequent intervals during three or four days preceding death.

1515. An Aneurism of the right Axillary Artery. A silk ligature is seen on the third part of the subclavian artery. The wall of the aneurismal sac is lined by partially decolorised firm fibrin; the centre with softer blood-clot. The artery between the ligature and the sac is also filled with clot.

From a man, aged 32 years, who died of pyæmia twenty days after ligature of the subclavian artery.

The lower parts of the jugular, subclavian, and axillary veins were filled with blood clots.—See *Pathological Society's Transactions*, 1872, p. 74.

A drawing is preserved, No. 106.

Vide Nos. 1452, 1547, 1549.

CEREBRAL ARTERIES.

1516. Portion of a Cerebrum, with an aneurism of the middle cerebral artery about an inch from its origin. The sac of the aneurism is filled by dark, firm, laminated coagulum ; its walls apparently consist, in the greater part of their extent, of the dilated coats of the artery. The arteries with which the aneurism is connected are larger and thicker than is natural. VI. 44

The patient was a man, aged 45 years. About two years before his death, he had an apoplectic attack. After this he had several slighter attacks, and was hemiplegic, though gradually recovering, to the time of his last illness; in which illness he had obscure signs of gastric disease, then became drowsy, and at last insensible, and died in a state of great exhaustion.

The vertebral artery, after death, was found irregularly enlarged into pouches. The canal of the middle cerebral artery was pervious, the aneurismal dilatation affecting chiefly the inferior portion of its walls.

1517. Two middle Cerebral Arteries, from the same patient. The trunk of that of the right side is partially dilated into a small bilobed aneurismal sac, which is nearly filled by a coagulum of pale fibrin. The trunk of the left artery is ruptured at a point nearly corresponding to that from which the aneurism has arisen on the right side. The rupture, into which a bristle is passed, extends through all the coats of the artery, and in an irregular line round more than half its wall. There are several small deposits of fatty substance in the walls of the arteries. VI. 59

From a woman, aged 84 years, who died twenty-two hours after an attack of apoplexy. A copious effusion of blood had taken place from the ruptured artery, into the substance and membranes of the base of the brain.

1518. A left middle Cerebral Artery, with a small aneurism on one side of its trunk. The aneurism lay very deep in the fissura Sylvii, nearly imbedded in the adjacent cerebral convolutions, and it burst into the substance of the brain by the irregular rent which is indicated by a bristle. A part of its cavity is filled by a firm decolorised layer of coagulated blood. VI. 67

1519. A Clot of Blood, weighing between four and five ounces, which was effused from the aneurism last described into the substance of the left hemisphere of the cerebrum. VI. 68

The patient was a footman, aged 38 years. He had suffered from occasional giddiness, ringing in the ears, and other slight signs of disease of the brain ; and had enlargement, with disease of the valves of the heart ; but he had been engaged in his work till the day before his

death, when, while leaning over the side of his bed, he suddenly became insensible, and in a few minutes died.

There is a drawing of the brain with the clot in its recent state, No. 350.

1520. Aneurism of a middle Cerebral Artery of irregular form, and solid in the greater part of its extent. A slight elevation upon its surface is marked by the convergence of three arteries, one of which is obliterated as it lies upon the sac wall. The remaining two, laid open and indicated by bristles, lead to the interior of a sac, evidently formed from part of their walls. About half an inch from these vessels there is a small rent, shown by a bristle which is passed through it. The wall at this point is formed of calcareous matter, and the slit is evidently due to the cracking of soft parts at the edge of one of the calcareous plates. From this aperture a quantity of blood had escaped during life, and had so determined the death of the patient. The tumour consists of laminated clot, except at the part where a small cavity is shown, with which the arteries described, as well as the crack, clearly communicate. The sac wall is free from the calcareous change, except at the point referred to. VI. 81

From an elderly man, who had suffered from severe attacks of epilepsy. These ceased suddenly, and for eighty days he appeared to have regained his health. On the eighty-first day he died in a few hours with the usual symptoms of apoplexy.

1521. Aneurism of the right Middle Cerebral Artery. The aneurism is double, consisting of two sacs, the larger of which having much the thinner wall, communicates with the smaller or thicker-walled sac, close to the opening between the latter and the artery. Both sacs contain laminated blood-clot. A bristle is passed through the communication between the artery and thicker-walled sac, and out through a rupture in the wall of the thinner sac.

From a boy, aged 13 years, who died from rupture of the aneurism. The arteries were generally healthy. The mitral valve was diseased, but the heart was not much hypertrophied.

1522. A sacculated Aneurism with thin walls at the bifurcation of the Middle Cerebral Artery. A large rent in the sac is seen.

From a woman, aged 33 years, who died almost immediately after admission to the Hospital. Blood was effused into the pia mater at the base and over the convexity of the brain.—See *Post Mortem Book*, vol. iii, No. 120.

1523. An Aneurism as large as a hazel nut, springing from the right Middle Cerebral Artery about one inch from its origin.

From a man, aged 50 years, who was for eight years an inmate of an asylum. His mania was neither epileptic, suicidal, nor dangerous, and he worked on the farm, except for two periods, when he was more or less violent and excited. There were no symptoms indicating cerebral aneurism. He died quite suddenly, when apparently in good health.

A blood clot was found in the right fissure of Sylvius, which proceeded from a large rent on the distal side of the aneurism. There was considerable erosion of the brain tissue, in which the aneurism was imbedded. The brain substance was firm and pale. The arteries were small, tortuous, and undergoing calcareous degeneration.

Presented by T. O. Wood, Esq.

1524. A small Saccular Aneurism of the Anterior Communicating Artery. A minute rupture is seen on its anterior aspect.

From a woman, aged 56 years, who, when first seen, complained of severe headache, was dull, yet sensible. She gradually became comatose. The pupils were extremely contracted throughout. Death took place on the fourth day after the onset of symptoms.

A clot was found in front of the optic commissure, which extended along the cerebral vessels.

Presented by Mr. Spark.

1525. Part of a Brain showing upon the Anterior Communicating Artery a small ruptured aneurism, the size of a hemp seed, and having very thin walls.

From a man, aged 54 years. The blood was found to have made its way into the ventricles beneath the right hippocampus major. The pia mater of the base of the brain, and of the whole spinal cord, was full of blood. The arteries generally were atheromatous, and the left ventricle was much hypertrophied.—See *Radcliffe Ward Book*, February 12th, 1871.

1526. Aneurism of the Anterior Communicating Artery, about the size of a small marble, and having a rent on its lower aspect.

From a man, aged 41 years, who died about twenty-four hours after the onset of symptoms. Blood was found effused in the meninges, and it had forced its way through the corpus callosum into the lateral ventricles.—See *St. Bartholomew's Hospital Reports*, vol. xii, 1876, p. 239.

1527. Aneurism of the Anterior Communicating Artery, from a man, aged 20 years, who was admitted into the Hospital with symptoms of meningeal hæmorrhage, and died on the following day. The meninges were found filled with blood. The aneurism was not ruptured, and the source of the hæmorrhage could not be ascertained. The arteries were free from atheroma. Heart and kidneys normal. No clots in the heart.—See *Transactions of Pathological Society*, vol. xxix, 1878, p. 106.

1528. An Aneurism the size of a large pea in front of the bifurcation of the Basilar Artery.

From a woman, aged 40 years, who died suddenly in convulsions, while preparing to leave the Hospital into which she had been admitted one month previously for epilepsy.

1529. The Arteries at the base of the Brain as seen from below. The left vertebral is dilated. The basilar at its origin is thickened and dilated to the size of a split pea, and about the middle of the dilatation on the left side is a small opening, through which a glass rod has been passed.

The specimen was taken from the body of a man, aged 52 years, who was admitted into the Hospital October 26th, 1877. He had fallen off his seat whilst at work, from vertigo, but there was no loss of consciousness and no convulsions.

When first seen he could stand and walk; there was slight right facial palsy, with slight dilatation of the right pupil. Five hours later he suddenly uttered a cry, put his hand to the back of his neck, and became deeply comatose. His respirations fell in number to six in the minute, and he died half-an-hour later from increasing dyspnœa.

A large clot surrounded the pons and medulla.—See *Matthew Ward Book*, vol. vi, p. 165.

1530. The Arteries of a Brain, having upon them numerous miliary aneurisms.

From a woman, aged 70 years, who had been subject to epileptic fits for seven years. She became hemiplegic on the left side three months before death, and during the two previous months she had only been partially conscious. There was slight yellow softening of the anterior inferior angle of the right cerebral hemisphere.—See case of Catherine Herbert, *Hope Ward Book*, vol. i.

For other specimens of Aneurism of the Cerebral Arteries, vide Series XXX, Nos. 2471, 2472.

ABDOMINAL AORTA.

1531. The Abdominal Portion of the Aorta, with an Aneurism formed by dilatation of the greater part of its circumference, and extending from the superior mesenteric to the iliac arteries. The walls of the sac and of the adjacent portions of the artery are thick and tuberculated; there is a small round aperture, through which the front of the aneurism burst into the duodenum by a regular, smooth-edged opening. The superior and inferior mesenteric arteries are obliterated at their origins. XIII. 68

The aneurism had probably existed more than two years. The rupture occurred four days before death.

Presented by John Thorn, Esq.

1532. Part of an Abdominal Aorta, with a large Aneurism, which has extended from its posterior wall backwards through the vertebræ and ribs, and forms a large sac external to the chest by the side of the spine. XIII. 48

1533. The descending Aorta and Iliac Arteries, showing part of a large false saculated aneurism, springing from the posterior wall of the aorta just above the bifurcation.

From a man, aged 33 years. The aneurism by pressure had produced well-marked symptoms of constipation for about four months, which terminated in complete intestinal obstruction, lasting for ten days. The immediate cause of death was extensive hæmorrhage into the peritoneal cavity.

The whole of the aorta was in a state of advanced atheroma.—See *Abernethy Ward Book*, vol. ii, pp. 92 and 425.

Vide Nos. 1456, 1457, 1458, 1548.

BRANCHES OF THE ABDOMINAL AORTA.

1534. Part of a Splenic Artery, with a small Aneurism formed by the dilatation of a portion of its wall. Earthy matter is deposited in the coats of the sac. XIII. 46

1535. A Splenic Artery, exhibiting a deposit of earthy matter between its coats, and a small aneurismal pouch formed by dilatation of about half its circumference. XIII. 98

1536. Portion of a Renal Artery, with a small Aneurism. Earthy matter is deposited in the coats of the sac, and the adjacent walls of the artery appear thickened and indurated. XIII. 50

Vide No. 1550.

COMMON ILIAC ARTERY.

1537. The Aneurism referred to in No. 1570. It is situated at the bifurcation of the abdominal aorta, and involves the left common iliac artery.

1538. Portion of a Common Iliac Artery, showing a small aneurism in the early stage of its formation. Immediately above the bifurcation, there is a circumscribed dilatation on the posterior surface. The free edge of the inner coat forms a thick and uneven margin to the pouch, the wall of which is formed only by the external and middle coats of the vessel. The artery is generally atheromatous; a wide calcareous plate, nearly half an inch long, extends upward from the dilatation and forms part of its upper margin.

From a middle-aged man, who died of apoplexy. All the arteries were extremely atheromatous.

FEMORAL ARTERY.

1539. Iliac and Femoral Arteries, with an Aneurism at the commencement of the femoral artery, for the cure of which the external iliac has been tied. The sac is large, nearly globular, and in great part filled by laminated coagulum. Upon its lower part a portion of the skin is left, with the aperture through which it burst externally. The ligature was applied about an inch and a quarter above the sac, and it has completely divided the internal coats of the artery. Between the situation of the ligature and the sac there is a small deposit of fibrinous coagulum. Between the situation of the ligature and the division of the common iliac, the artery is completely filled by coagulated blood. The coats of the artery are apparently healthy. The femoral artery, as it passes out of the lower part of the sac, is impervious. The profunda passes out of the middle of the sac, and is pervious. The femoral vein is open above and below the sac, and is obliterated by the pressure of the sac in the mid-space. The anterior crural nerve is connected with the sac, and is flattened by its pressure. XIII. 26

The patient was a man 70 years old. The aneurism had existed two years and a half before

it burst through the sloughing integuments. The artery was tied directly after the rupture, and the patient lived fifty-five hours.

540. An Aneurism of the common Femoral Artery, for which the external iliac was tied.

The patient, a man, aged 40 years, had long suffered from severe attacks of gout and from disease of the heart. A swelling in the groin was noticed four weeks before his admission to the Hospital, which rapidly increased in size. He died on the fourth day after the operation from peritonitis; the peritoneum was wounded in the operation.

See *Abernethy Ward Book*, vol. i, p. 110.

541. Aneurism of the left Femoral Artery. The aneurism occupies the upper portion of the artery, extending from an inch below Poupart's ligament to the profunda artery. The front wall of the aneurism is formed by a fusiform dilatation of all the coats of the artery, their texture being but little altered. Posteriorly, the aneurism is sacculated, about the size of an orange, and formed by a diffused and irregular mass of coagulum having no definite boundary wall. On passing a stream of water, under slight pressure, into the artery from above, none appeared to escape from the lower end; and it was evident, on further examination of the clot contained in the aneurism, that it was sufficiently firm to have arrested the current of blood through it.

From a man, aged 72 years, who was treated by compression of the femoral artery.—See *Abernethy Ward Book*, vol. ii, p. 29.

Vide Nos. 1396, 1459, 1551.

POPLITEAL ARTERY.

542. Aneurism of the right Popliteal Artery. The artery is thickened and atheromatous. The aneurism springs entirely from the posterior aspect of the vessel, commencing about one inch and a quarter above the origin of the tibial vessels. The arterial coat appears to terminate abruptly and cannot be traced in the aneurismal sac, which was principally formed of thickened cellular tissue and expanded muscle, but in one place the skin only bounded it, and in others it seemed to have consisted only of fascia. The popliteal nerve was tightly stretched over the sac, rendering it more or less bilobed. The vein very much contracted, was flattened out near the sac. The termination of the artery was filled by a moderately firm plug, which was continuous with a firm decolorised clot in the entrance of the sac. The centre of the sac was full of dark coagulum (which has been washed out), but the wall was lined by decolorised laminæ of fibrin. That in the upper half is firm and tough, but the lower portion is softer, and in parts almost diffluent.

From a man, aged 65 years.

542A. The Femoral Artery and Vein of the man from whom the preceding preparation was taken. The artery was tied in Scarpa's triangle fourteen days before death. The ligature was found detached on the day on which death occurred. About three-quarters of an inch of the artery and vein, corresponding to the seat of the ligature, has sloughed away. The ends of the vessels were lying separated in the cavity of the wound, connected by the saphena nerve, which is preserved. The vessels are both firmly occluded by coloured clots; that in the artery reaching upwards to the profunda, and downwards for some inches. There was at no time any symptom of venous obstruction.

543. Popliteal Aneurism, with nearly the whole of the femoral artery and vein of the left side. The artery was tied with carbolised catgut in Scarpa's triangle. A small jagged perforation of the arterial coats was found near the spot where the vessel was tied. No trace of the ligature could be found. The inner and middle coats of the artery had been divided, but there was no trace of any clot,

the vessel being pervious throughout. The aneurism had burst on its anterior surfaee.

From a man, aged 30 years, who died from seeondary hæmorrhage a week after ligature of the femoral artery.

1544. A Popliteal Artery, with part of a large Aneurismal Sae. The upper portion of the artery is pervious to its termination in the sae, into which it opens by a smooth round orifice. The lower portion of the vessel is also pervious, and eommunieates with the sae by an opening of eonsiderable length. The upper portion of the popliteal vein is obliterated; the lower part is pervious. XIII. 53

1545. Portion of a Popliteal Artery laid open, showing a eircular uleer, with soft and uneven margins, between two and three lines in diameter, which has perforated its walls. For some distanee above, and to a less extent below, the eoats of the vessel are thiekened by earthy deposit. XIII. 143

It was removed from a man, aged 33, who was admitted into the Hospital with a large aneurismal tumour immediately below the popliteal spaee. He had discovered it five weeks previously, and it was then nearly as large as when he was admitted. The femoral artery was tied in the usual plaee. The ligature separated on the tenth day, and the man left the Hospital six weeks afterwards with the wound nearly healed. Three weeks after he had returned home profuse hæmorrhage oeeurred from the wound, then almost elosed. This subsequently reeurred, and the patient died.

In the post mortem examination it was shown that the hæmorrhage proeeeded from the upper end of the artery, where it had been tied (see the following preparation). This had separated from the lower end, and eontained only a small eoagulum. It was obviously patent. The large mass below eonsists of blood-elot, and the surrounding tissues. The aneurism had no other sae. Immediately above the uleer there was a small eoagulum.

1546. The portion of the Femoral Artery referred to in the deseription of the preeeding preparation. XIII. 144

Vide Nos. 1407, 1453, 1460, 1461, 1552.
Aneurism of posterior tibial, *vide* No. 1463.

SPECIMENS ILLUSTRATING THE MODE OF CURE OF ANEURISM.

SPONTANEOUS CURE.

1547. The Areh of an Aorta, with the Subelavian and Carotid Arteries. The right subelavian artery exhibits the remains of an aneurism which has been spontaneously eured. The aneurism appears to have been formed by dilatation of the whole eireumferenee of a portion of the artery about two inehes long. On eaeh side of the aneurism the artery is eontraeted and eompletely elosed: above the aneurism its walls appear to have eoaleseed; below the aneurism its eavity is filled by fibrin to the extent of nearly an ineh. The inner eoat of the aorta and its braneh es is thiekened, and there are deposits of soft substance beneath it. XIII. 75

By Deposit of Laminated Fibrin.

1548. Seetions of an Aneurismal Sae, whieh was situated on the Abdominal Aorta, immediately below the superior mesenterie artery. The eœliae and superior mesenterie arteries are obliterated at their origins. The sae is completely filled by firm laminated eoagulum. The eoats of the aorta are thiekened and opaque. XIII. 7

From a man, aged 45 years, who died from rupture of the dilated aorta in No. 1484.

1549. A Heart and Large Vessels. There are large vegetations on the aortie valves and the aorta is atheromatous. The seeond part of the right subelavian

artery is the site of an aneurism about as large as a walnut, nearly filled with laminated fibrin, which is perforated by a central canal; about one inch and a half beyond the aneurism, the axillary artery is completely obstructed at its commencement by an embolon. There is also an embolon in the left femoral artery near the origin of the profunda.

From a woman, aged 39 years. Although the respective dates of the aneurism of the subclavian and the embolon in the axillary artery cannot with certainty be fixed, it seems probable that the latter was of later date than the former, and was a chief cause of the consolidation of the aneurism. To this consolidation the aortic obstruction also probably contributed largely.

Symptoms of embolism of the femoral artery appeared about three weeks before death, whilst the patient lay in bed in the Hospital.

She had been admitted some months previously with the following history:—Three weeks before, whilst doing heavy work, she was seized with a violent pain in the right arm, followed by loss of power. A swelling soon afterwards appeared in the neck.

The swelling diminished some time before death.—See *Lucas Ward Book*, vol. ii, p. 423; and *Pathological Society Transactions*, vol. xxiv, p. 67.

550. Aneurism of a branch of the superior Mesenteric Artery. The aneurism is about the size of a pigeon's egg, and its cavity is nearly filled by laminated fibrin. Several branches are given off from it.

From a man, aged 34 years, who died with chronic endo-carditis and dilatation of the heart.

Vide Nos. 1486, 1508.

DEPOSIT OF BLOOD-CLOT OR LAMINATED FIBRIN FROM LIGATURE OF, OR PRESSURE ON, THE ARTERY SUPPLYING THE ANEURISMAL SAC.

551. A large Aneurism of the left Femoral Artery for which the external iliac artery was tied. The parts preserved are the left internal and external iliac and femoral arteries; portions of the corresponding veins and of the anterior crural nerve. The external iliac artery has been tied exactly two inches above the crural arch. The tissues about that point have not been disturbed. The artery is laid open above and below the ligature: a firm clot fills the canal for one inch and three-quarters above, and for three-quarters of an inch below it. Three branches of the ordinary size arise from the last inch of this vessel. There was nothing abnormal in the common or internal iliac arteries. The branches of the latter were not enlarged. The tumour, of an irregularly oval shape, involves the first part of the femoral artery for three inches, commencing abruptly at the crural arch, and ending in a similar manner three-quarters of an inch below the origin of the profunda. Its greatest circumference is eleven and a quarter inches, and its diameter four and a half inches. The section shows that the sac is composed of the arterial tunics and the sheath of the vessel. The latter has been in part removed from behind to expose the vein. On the surface of the section the several structures forming the sac have been raised, and their continuity with the healthy arterial tissues demonstrated. The external coat and the sheath are thickened; the internal coats much attenuated. The section shows at the circumference laminated pale fibrin, closely adherent to the lining membrane of the sac. Recent clots, now hardened by spirit, form the rest of the contents. The profunda artery arises from nearly the lowest part of the aneurism: it is of the usual size and pervious. The small superficial vessels, usually given from the first part of the femoral artery, are absent: this is probably explained by the occurrence of a third branch from the external iliac. The femoral vein, behind the tumour, is laid open: it is plugged at the lower part. The saphena vein is thickened but pervious. The anterior crural nerve is spread out on the wall of the sac.

The specimen was taken from an intemperate sailor, aged 32 years. His tissues were loaded with fat. A large pulsating tumour had existed in the groin for eighteen months. At the

time of his admission it raised Poupart's ligament and encroached on the pelvis. The limb was œdematous. There was an indefinite account of some injuries received twelve months before the aneurism appeared. The man died on the eighth day after the operation from diffuse suppuration in the cellular tissue between the abdominal muscles, and in the subperitoneal tissue at the back of the abdomen. The liver and kidneys were congested and "fatty."

1552. Aneurism of the Popliteal Artery filled with recent laminated fibrin. The aneurism had been treated by flexion of the patient's limb upon the trunk, and all pulsation in the sac had ceased. Four hours after the limb had been returned to the horizontal posture symptoms, supposed to be those of gangrene, made their appearance and amputation through the limb was performed.

The patient made a good recovery.

Vide Nos. 1509, 1510, 1512, 1515, 1541, 1542.

SPECIMENS ILLUSTRATING THE PROGRESS OF ANEURISM.

RUPTURE OF ANEURISM.

Vide Nos. 1457, 1460, 1543.

INTO THE THORACIC CAVITY, *Nos.* 1487, 1497, 1505.
INTO THE PERICARDIUM, *Nos.* 1464, 1465, 1468, 1469, 1478, 1480.
INTO THE CAVITIES OF THE HEART, *No.* 1472.
INTO THE PLEURAL CAVITY, *No.* 1484.
INTO THE TRACHEA, *Nos.* 1493, 1494, 1500.
INTO THE BRONCHUS, *No.* 1499.
INTO THE ŒSOPHAGUS, *Nos.* 1494, 1495, 1502, 1504.
INTO THE PULMONARY ARTERY, *Nos.* 1475, 1476, 1477, 1485.
INTO VEINS, *No.* 1490.
INTO THE PERITONEAL CAVITY, *No.* 1533.
INTO INTESTINE, *No.* 1531.
INTO THE BRAIN OR ITS MEMBRANES, *Nos.* 1518, 1520, 1521, 1522, 1523, 1524, 1525, 1526, 1529, 2471, 2472.
EXTERNALLY, *Nos.* 1496, 1539.

THE PRESSURE EFFECTS OF ANEURISM.

PRESSURE ON TRACHEA, *Nos.* 1454, 1483, 1507.
PRESSURE ON NERVES, *Nos.* 1504, 1536, 1539, 1542, 1551.
PRESSURE ON, AND OBLITERATION OF, VEINS, *Nos.* 1459, 1461, 1539, 1542, 1551.
EROSION OF VERTEBRÆ, *No.* 1504, *and Series I, Nos.* 15, 16, 17.
PENETRATION OF THE CHEST WALL, *Nos.* 1486, 1487, 1488.

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OBLITERATION AND COMPRESSION OF ARTERIES.

FROM DISEASE OF THE VESSEL.

1553. A Popliteal Artery, in which the internal coat is thickened, wrinkled, and the seat of abundant earthy deposit. A portion of it, an inch in length, is obliterated. XIII. 4

1554. Part of an Abdominal Aorta, with the right Renal Artery obliterated by deposits of earthy matter filling its cavity. The internal coat of the aorta is thickened. XIII. 5

From the same diabetic patient as No. 1482 in this series, and Nos. 1953, 1954, in Series

XVIII. The kidney to which this renal artery belonged was of full size, and its pelvis contained urine.

BY PRESSURE OF ENLARGED GLANDS, AND NEW GROWTHS.

555. The Base of a Heart, with the large vessels, the Trachea, and the Bronchial Glands. The whole of the bronchial glands are converted into one large mass of new growth (probably lympho-sarcoma), of very firm consistence, and a pale pinkish white colour, irregularly mixed with the ordinary black pigment of the bronchial glands. Both the main bronchial tubes pass through this mass; and they are much compressed. It surrounds and compresses the pulmonary arteries and veins, and the vena cava superior. The arteria innominata and both the venæ innominatæ are also pressed upon by the upper part of the growth. The vena cava superior is so much compressed that its canal would scarcely admit more than the bristle which is passed through it. At the junction of the venæ innominatæ, the morbid growth appears to have made its way into the cavity of the vein. Near the junction of the right subclavian and internal jugular veins, beneath the valve, there is a small growth from the interior of the vein, the structure of which appears to resemble that of the large tumour.

The patient was a man, 30 years old. The disease was of about six months standing. Its progress was attended by great dyspnœa, and by enlargement of the cutaneous veins of the face, neck, and trunk, especially of those on the right side of the neck and chest. The venous current in them all ran downwards.

556. Parts of an Abdominal Aorta, and of the Vena Cava Inferior. Both vessels are embedded in a mass of enlarged lymphatic glands. The coats of the aorta are thickened, and its cavity is contracted just above its division into the iliac arteries. The vena cava, to the extent of three inches above the iliac veins, is completely filled by concentric layers of fibrin which are adherent to its inner surface. XIII. 17

Vide Nos. 1497, 1520, 1548.

EMBOLISM AND THROMBOSIS OF ARTERIES.

557. Part of the Arteries from the base of a brain. Injection, impelled into the left internal carotid artery, filled all the arteries of the circle of Willis that were removed from the brain, except the left middle cerebral artery. The trunk and principal branches of this artery are contracted and closed upon fibrinous clots, which were detached from the aortic valves, and carried into the artery with the stream of blood. VI. 75

From a woman who died, about two months after the occurrence, of hemiplegia, and nearly four months after delivery. There was extensive softening of the left corpus striatum and other adjacent parts of the brain. The aortic valves were extensively diseased.

558. A right internal Carotid Artery, with its primary branches. Its canal is occluded by a soft, coloured coagulum, which extends nearly as far as the bifurcation of the middle cerebral, and terminates in a small trefoil-shaped nodule, which projects into the commencement of one of the branches. This is less darkly coloured and more firm than the remainder of the clot. VI. 77

From the body of a man who had extensive disease of the heart, especially of the mitral valve. Two days before his death he was apparently in his usual health; he suddenly fell, and was brought to the Hospital with all the symptoms of apoplexy, accompanied by left hemiplegia. The greater portion of the right hemisphere was soft, and about its centre quite diffluent; the walls of the several arteries of the brain were free from disease.

559. Portions of the internal Carotid and middle Cerebral Arteries laid open, showing a fibrinous plug at the point of bifurcation of the latter, occluding the

canal. It was associated with extensive disease of the aortic and mitral valves. VI. 79

The heart is in Series VII, No. 1324.

1560. Portion of a Femoral Artery, exhibiting the obliteration of its trunk and of the commencement of the profunda, by the deposit of fibrin in concentric layers, forming a firm clot about an inch in length. The arterial coats appear healthy. XIII. 22

From a young man who died with disease of the aortic valves. Some time before his death the limb from which this artery was taken became, without any evident cause, pulseless and cold.

1561. A portion of the right Femoral Artery of the patient from whom the specimen of disease of the aortic valves shown in Series VII, No. 1332, was taken. A few days before death he complained of acute pain and numbness in the right thigh. The temperature of the limb was at the same time considerably reduced. The artery is laid open to show a firm fibrinous plug filling up and obstructing the canal. The clot presented in different parts some slight differences of consistence and colour. The walls of the artery exhibited in some spots traces of atheromatous degeneration.

1562. A Clot, which was removed from the pulmonary artery of a woman, aged 33 years, who died suddenly from syncope nineteen days after delivery of her third child, having apparently progressed favourably up to that date. The clot measures three inches in length and about one in diameter. One extremity, that which was towards the heart, is smooth and conical; the opposite is hollow, with ragged edges, leading into a cavity which occupies the greater portion of the interior, and is partially filled with grumous rust-coloured fibrin. It appears as if the clot had been gradually softening and disintegrating from the interior. The exterior is of a deep orange-colour, and its structure presents no trace of lamination. XIII. 152

1563. Another and smaller Clot, in situ, from the opposite lung in the same case. It measures two inches and three-quarters in length and half an inch in diameter. Its extremity is rough and conical. It completely fills one of the primary pulmonary trunks, being continned into three branches by forked extremities. Of these, two, like the main clot, are firm and solid, the third is soft and pulpy. XIII. 153

Presented with the preceding by Mr. Havers.

1564. A Pulmonary Artery, with a portion of the Lung. The right branch of the pulmonary artery is completely filled by a firm coagulum of fibrin, closely adherent to its internal surface. The smaller branches are also filled by similar coagula. The portion of the coagulum in the lower part of the bottle accidentally separated in the examination of the body. XIII. 100

The patient, a middle-aged lady, died suddenly during apparent convaleseence after the removal of a large medullary tumour of the breast, preserved in No. 3310, Series L. The case is related by Sir J. Paget in the *Medico-Chirurgical Transactions*, vol. xxvii, p. 166. London, 1844.

1565. Arteries from the base of a Brain, the canals of which are in various degrees obstructed by coagula. There was no disease of the heart, but softening of portions of the brain. VI. 80

Presented by Mr. Grosse.

1566. Part of one of the branches of the Pulmonary Artery from an extensively tubercular lung. Its canal contained some fluid blood, in addition to the firm, whitish coagulum, seen in the preparation. The latter clings but slightly to the wall of the artery, being however fixed by prolongations extending into the

communicating branches. The clot itself is pervious, a bristle being passed along its canal, which, in the recent state, was occupied by fluid blood. It thus formed a perfect tube within the artery. XIII. 133

567. Clot from a Pulmonary Artery, partly blood-coloured, partly of a pale fawn-tint. It exactly filled the canal of the vessels and the pouches behind the cusps, the latter being pressed inward, as shown by the moulding of the preparation. They were prevented from meeting by a narrow prolongation of the clot into the infundibulum of the right ventricle. XIII. 137

From a fatal case of phthisis pulmonalis.

568. A similar preparation. The clot is more contracted than the preceding, so much indeed as to look like a mere film, especially where it is moulded to the interval between the cusps and their corresponding pouches. XIII. 139

From a case of pneumonia. In this, as in the two preceding preparations, the clots have prevented the pulmonary valve from acting. No symptoms occurred during life to mark their formation. *See* also the preparations 1270 and 1271, in Series VII.

569. Portion of a Heart. A large clot extends from the commencement to the bifurcation of the pulmonary artery.

The lungs from the same case are preserved in Nos. 1751 and 1752, Series XI.

570. The Superior Mesenteric Artery of a man, aged 29 years, upon whose abdominal aorta long-continued pressure under chloroform was applied for the cure of an aneurism at the bifurcation of the abdominal aorta (*see* No. 1537). The artery presented a bruised and purple appearance, and was flattened out from its origin for a little more than an inch. The coats of the artery were infiltrated, and the inner presented an appearance as if greatly inflamed. Here and there coagula were firmly adherent, but a central canal still existed. The splenic artery was in this case given off from the superior mesenteric. Portions of coagula had passed into the spleen and pancreas. The lower part of the pancreas was disintegrated. The patient died of peritonitis. XIII. 180

See *Darker Ward Book*, vol. i, p. 114.

571. A Femoral Artery and Vein, from a man in whom, in advanced life, gangrene of the leg spontaneously arose several months before death, and extended high up the leg. The femoral artery, in its whole extent, is made rigid by the deposit of earthy matter in its coats, and its cavity is filled by a firm, solid, and partially laminated coagulum. The coats of the femoral vein are thickened; portions of it are filled by firm coagulum. I. 101

571a. Portions of the right and left Popliteal and Posterior Tibial Arteries from an aged woman, in whom gangrene of the left foot and leg spontaneously arose four weeks before death. The canal of the left popliteal is occupied about its middle by a conical, firm, decolorised clot, adhering closely to the inner wall of the artery. At its inferior extremity the posterior tibial is blocked by a soft, pinkish coagulum, which entirely fills its canal for a considerable distance, and clings with tenacity to the adjacent walls. A small irregularly-shaped plate of firm tissue projects, curling upon itself, into the canal of the right popliteal; in colour and general appearance it closely resembles the wall of the artery to which it is firmly connected by its middle and base. Immediately below, and to the left, a portion of the arterial wall is greatly thickened, and presents superiorly a chink, looking as though its inner layer might readily be turned off after the fashion of the portion above it. The arteries were atheromatous. —See *St. Bartholomew's Hospital Reports*, vol. xii, p. 93. XIII. 126

571b. Section of a Femur, with the femoral artery and vein attached to it. The bristles in the cut surface of the femur mark the boundaries of a cavity in the

bone which is filled by soft substance. From this cavity it was presumed from the history of the case, that a portion of dead bone had been extracted during the lifetime of the patient. Upon the surface of the femur there is an irregular deposit of bone thickening its wall: and to this the femoral vessels are very firmly adherent. The femoral artery is sound and of its full diameter in its whole extent. The femoral vein is also of healthy texture, but is much contracted in that part which adheres to the femur and lies within the tendinous sheath containing the vessels just before their passage into the ham: below this part there are clots in both the vein and the artery. I. 134

From a middle-aged woman, who died with dry gangrene of the leg.

1572. Clot from a Pulmonary Artery, but the clot, though retaining the moulded character, is firmly contracted and shrunken. In this case the cusps of the pulmonary valve were pressed back by the clot against the arterial wall. The narrowing of the clot is consequently less conspicuous upon the cardiac aspect. XIII. 138

From a fatal case of pneumonia. The clot was probably formed during the last hours of life.

For other specimens of Embolism and Thrombosis, vide No. 1549, *and Series XI, Nos.* 1747 *to* 1753.

ENTOZOA IN ARTERIES.

1573. Portion of an Aorta, with the Cœliac and Mesenteric Arteries, from a Horse. The cœliac artery is obliterated at its origin; it then becomes dilated into a wide pouch filled by layers of firm fibrin in which there were several worms (Strongylus armatus). These worms exhibited lively movements for a considerable period after their removal from the body. Some of them lie loose at the bottom of the bottle. XIII. 109

SERIES IX.

DISEASES AND INJURIES OF VEINS.

VARICOSE DILATATION.

574. Portion of a Femoral Vein, exhibiting a partial dilatation of its coats in the form of a circumscribed pouch, projecting from one side. The pouch is lined by a continuation of the internal coat of the vein. Immediately above the pouch there are two valves in the vein, which have undergone no change. The coats of the vein are generally thickened. XIII. 78

575. Portion of a Vena Saphena and its branches in a varicose state. The veins are generally and uniformly dilated; their coats are thickened and rigid, so that their canal remains open; and they have a convoluted and very tortuous course. XIII. 77

576. Portion of a Vena Saphena, the walls of which are in several places dilated in the form of pouches. Its coats are thickened, and there are thin cords, apparently the remains of its valves, extending across its cavity. XIII. 79

CALCAREOUS DEGENERATION.

577. The Popliteal and portions of the Tibial Veins of a man, aged 60, who died twelve days after amputation of the foot for injury. The coats of the veins are much thickened, and in some places their inner surface is studded with thin brittle plates of earthy matter. These are most abundant in the neighbourhood of the valves, and increase in number towards the terminations of the vessels. The posterior tibial vein is for some distance an almost rigid tube. The arteries corresponding to these veins were in a condition of extreme degeneration.

SUPPURATIVE PHLEBITIS.

578. A Femoral Vein and Artery. The vein is thickened, and its upper extremity is occluded by a clot. The intima is pulpy, and at the middle of the portion of the vessel preserved is separated from the other coats, and sloughy. An abscess was here in contact with the vessel. The vein was filled with a curdy puriform fluid, which, on examination with the microscope, was found to be broken down blood clot containing numerous pus corpuscles. Microscopic sections of the vein showed that the deep layer of the intima was crowded with leucocytes, and the endothelium had separated.

From a man, who died of septicæmia three weeks after undergoing amputation of both thighs for a railway injury. The stump of the thigh from which the femoral vein was taken, was from the first sloughy.—See *Colston Ward Book*, vol. vi, January, 1880.

579. Right External Iliac and Femoral Vein. The coats of the vein are much thickened, and are consolidated with the surrounding tissues. Its interior is rough with lymph deposited on its lining membrane. The lower and upper parts of the vein, and all the branches proceeding from it, are filled by firm

coagula composed of concentric layers of fibrin. The middle portion of the vein contained only soft fibrin and a fluid resembling pus. XIII. 105

From a young man, who died after amputation of the right arm, which was performed in consequence of traumatic gangrene.

1580. A Femoral Artery and Vein, from a Stump. The coats of the vein are generally thickened and indurated. Lymph is deposited upon the whole of the inner surface of the vein, as high up as the junction of the deep femoral vein; and the lymph, mingled with clots of blood, completely fills the cavity of the vein to some distance above the amputated extremity. A conical clot, an inch in length, fills the end of the cavity of the artery. XIII. 19

The patient was a man, aged 45 years. Amputation was performed for compound fracture. The cavity remaining within the lymph in the vein was full of pus.

1581. A Femoral Vein, exhibiting an abundant and nearly uniform deposit of lymph upon its inner surface. That part of the inner membrane of the vein which is exposed is of a dark red colour. The branches of the vein are filled by firm coagula. XIII. 34

These veins were taken from the left lower extremity of a man who had compound fracture of the right thigh. He died a month after the injury, with obscure signs of phlebitis. The remaining cavities of the veins were full of pus; but no other veins were diseased.

1582. Femoral Vein from a Stump, amputation of the leg having been performed about three weeks before death. The vein is dilated, thickened, and indurated, and there is a deposit of lymph upon its inner surface. Only one pair of valves remains in the whole extent of the vein from Poupart's ligament downwards; the others, it is presumed, disappeared in the course of previous disease of the vein. The superficial veins in the leg were exceedingly varicose. XIII. 95

ULCERATION EXTENDING INTO VEINS.

1583. Portion of a Right Temporal Bone, with the internal jugular vein and carotid artery attached. Just below the temporal bone there is a ragged aperture in the vein, the walls of which are thickened and the calibre narrowed, but just admitting the pieces of glass inserted.

From a child, aged 2 years, who was brought to the Hospital with a large abscess in the neck pointing below and external to the mastoid process. A small incision was made at this point by a dresser. A few drops of pus escaped, then some blood-clot, followed by a gush of dark blood. The hæmorrhage was arrested by a pad. As hæmorrhage recurred three days after, the abscess was laid freely open, but although the source of the bleeding was recognized to be the internal jugular vein, the vessel could not be secured and a graduated compress was applied. The child died shortly after the operation.—See *President Ward Book*, vol. vi, p. 180. *Vide* Series VIII, No. 1441.

EXPERIMENTS ON THE INJECTION OF PUS INTO VEINS.

1584. Part of the Femoral Vein of a dog, tied after the injection of eight drops of pus into its canal. The dog was killed forty-eight hours after. The interior of the vein presents a natural appearance. A small coloured coagulum occupies its canal below the ligature. Lymph is effused in the tissues around. XIII. 146

1585. Part of the Femoral Vein of a dog which was killed ninety-six hours after the injection of twenty drops of pus. The ligature has separated, and the vein is obliterated where it had been tied. Its internal coat presents a natural aspect. XIII. 147

1586. A similar specimen, in which three ligatures were applied to the vein. They have separated, and the portion of vessel included between the ligatures is destroyed. XIII. 148

EXPERIMENTS ON THE EFFECTS OF FOREIGN BODIES INTRODUCED INTO VEINS.

587. Four specimens showing certain changes in Veins. The two upper represent (*a*) an external circumflex vein occupied by a pale, fawn-coloured coagulum, which shows a spiral arrangement of the fibrin which forms it; (*b*) the femoral vein of a dog, part of which, included between two ligatures, had been punctured during life, the blood which it contained removed, and two small pieces of lead introduced. Twenty-four hours after the operation the vein was examined, and found surrounded by a quantity of lymph, a considerable amount of which had entered the vein through the puncture, distending the vessel as seen in the preparation.

The two lower represent: (*a*) Part of the femoral vein of a dog upon which an experiment was performed resembling the preceding, but the upper ligature was shifted so as to cut off the portion of vein in which the bits of lead were included from communication, through the puncture in its wall, with the outer wound. The portion of vein thus isolated is laid open, showing an unaltered condition of its lining membrane twenty-four hours after the operation. Its canal was free from exudation material, and the bits of lead lay in simple contact with the vein wall.

(*b*) Part of the femoral vein of a dog, into which a small piece of lead had been introduced, suspended from a thread, as seen in the preparation. The blood was then allowed to flow through the vessel for forty hours, at the end of which time the lining membrane of the vein retained its natural appearance. XIII. 159

This and the three preceding specimens were prepared by G. W. Callender, Esq.

THROMBOSIS OF VEINS.

588. A Vena Cava Inferior, with the Common Iliac Veins, obliterated by deposits of fibrin in their canals. From the contracted state of the iliac veins and of the lower part of the inferior cava, it was inferred that they had been obliterated for a considerable time. XIII. 31

The body from which they were taken was generally anasarcous, and one foot had mortified.

1589. Thrombosis of the commencement of the Lateral Sinus, of the Straight Sinus, and of the veins of the Choroid Plexus and Velum Interpositum. There was effusion of blood into both optic thalami. VI. 86

From a girl, aged 20 years. No disease could be detected elsewhere, but she had suffered from chlorosis for some months before death.

1590. The primary branches of a Portal Vein. One proceeding to the right lobe of the liver is occupied by a firm decolorised clot, which clings to the adjacent walls, but is not adherent to them. No symptoms existed during life to indicate its presence. The wall of the vein is wrinkled transversely. XIII. 127

1591. Part of a superior Mesenteric Vein, the canal of which is occupied by a decolorised clot. By the side of this a narrow channel existed, and allowed of the passage of fluid blood. In the centre of the coagulum is a small cavity, its walls stained of a pink colour. It contained some clear serum. XIII. 131

From the body of a man who died from chronic peritonitis.—See *St. Bartholomew's Hospital Reports*, vol. xvi, p. 139.

1592. Portion of the Ovarian Vein, from a woman in whom there was extensive medullary disease of the uterus and adjacent parts. The vein is dilated and filled by fibrinous coagulum deposited in concentric layers. XIII. 96

1593. The left common Iliac, the external Iliac, part of the Femoral and of the adjacent Veins irregularly distended, and with their canal completely obliterated by firm, more or less decolorised clots, clinging, not adhering, to the inner coat

of the vessels. Traced from below, these clots are arranged in successive layers, fitting cap-like one upon the other, terminating above in a pointed extremity, a mode of termination seen in a clot suspended separately, which was removed from the right common iliac. The veins opening into the main trunks are obliterated to some extent by coagula, continuous with those already described. Both sides are equally affected. The vena cava retained its natural appearance. The inner coat of the veins obstructed was unaltered, as seen after the removal of the clots from the vessels of the right side. The tissues around were much thickened and indurated. XIII. 128

From a woman who suffered from much obscure pain about the pelvis and groins after a protracted labour. She was brought to the Hospital, some months later, in a state of extreme emaciation, the lower extremities œdematous, and the abdomen distended with fluid.—See *St. Bartholomew's Hospital Reports*, vol. xiv, p. 327.

1594. A right common Iliac Vein, with the termination of the left, and of the right internal and external iliacs. They are opened on their posterior surface so as to expose the coagula within. One of these occupies the external iliac, and was thence continued into the femoral. It is firm and contracted, everywhere in contact with the shrunken vein wall, the outer coat of which and the surrounding tissues are thickened. This coagulum ends at the junction of the internal iliac, above which is a larger clot, the interior of which is softened and diffluent, forming a puriform mass separated from the circulation by the thin shell of fibrin shown in the preparation. XIII. 150

From a man who died with chronic inflammation of the contents of the pelvis.

1595. Portions of the left common, external, and internal Iliac Veins. They are completely filled up by firm and partially decolorised blood clots, extending to Poupart's ligament. Below the ligament, the clot in the femoral vein was disintegrated.

From a man, aged 35 years, who was admitted to the Hospital with phlegmonous erysipelas of the right leg and thigh. Profuse suppuration occurred, and he appeared to be recovering when pneumonia supervened, of which he died ten days later, and five weeks after admission to the Hospital. Five days before death, the left leg and thigh became œdematous.

The pulmonary artery containing coagula is preserved in No. 1748, Series XI.

1596. A Femoral Vein, from the junction of the profunda to an inch above the canal of Hunter. Its walls present a natural appearance, but its canal is occupied by a conical clot, which retains the colour and the appearance noticed in its recent state. About its middle, it was, internally, soft and diffluent, so that, when cut into, a sort of cavity quickly resulted, from the escape of its contents. This clot clung, but did not adhere, to the lining of the vein, and was further retained in its position by its connection with other clots which filled all the communicating branches. It terminates above, at a point where a large vein opens into the femoral, and here its shape seems to be influenced by the current of blood thus directed upon its surface. The tissues around were extensively ecchymosed, and all the smaller veins were filled with fibrinous clots, more or less decolorised, and apparently of older date than that which fills the femoral. The soft portions of the coagulum consisted of granular matter and fat. XIII. 135

From the body of a feeble old man, who died three weeks after sustaining a fracture at the neck of the left femur. The muscles and other tissues of the upper half of the thigh were the seat of extreme ecchymosis. There was slight œdema of the foot and leg, but no other symptoms existed during life to draw attention to the condition of the vessel detected at the post mortem examination.

1597. A preparation in many respects similar to the preceding. The clot which fills the femoral vein is tough, firm, and decolorised. The vessel is surrounded

below by some ecchymosed tissues, and here the small venous branches are occluded by old clots, continuous with the large one seen in the femoral. XIII. 140

From a man, aged 73, who died from bronchitis eleven days after sustaining a fracture of the left femur at the great trochanter. There was great ecchymosis of all the soft parts around, especially in the vicinity of the femoral vessels. The leg and foot were slightly œdematous.

598. Part of a Femoral Vein where it is joined by the profunda. The latter vessel is obstructed with firm clots which extend up into the femoral, forming in its interior an irregular mass of a pale colour. The coagula in the profunda were traced to a considerable ecchymosis which involved the structures about a fracture of the right femur, more especially in the inner and posterior aspect of the thigh. The entire extremity was œdematous. The fracture, which had occurred ten weeks prior to the patient's death, was still ununited. XIII. 158

The patient, a man, aged 42, died from an attack of continued fever.

1599. A Femoral Vein, from a man, aged 42 years. It is filled with blood, which coagulated in it a few days before death. The same condition was presented by all the veins of both arms and legs. The patient's illness, which was ascribed to phlebitis, began three weeks before death.

1600. Part of an external Saphena Vein. In consequence of a morbid growth involving and extending from the lower part of the femur of a young woman, the principal veins of the leg became obstructed by clots giving rise to marked œdema. The veins shrank upon the clots as the latter contracted, so that their canals in the midst of œdematous tissue were much reduced in size, and their walls appeared thickened, as though from inflammation. By injecting water they were easily restored to their natural size and appearance, as shown in the preparation. XIII. 157

For other specimens of Coagula in Veins, vide Nos. 1271, 1442, 1459, 1556, 1571, 1571B.

ORGANIZATION, AND CALCIFICATION OF BLOOD-CLOTS IN VEINS.

1601. External Pubic Veins from a Horse. The coats of the veins are sound. Within the cavity of one of them there are firm coagula of blood attached to the inner surface of the vein by solid round cords, behind some of which bristles are passed. One of these cords extends between two of the coagula, without having any attachment to the inside of the vein. XIII. 107

1602. Two Coagula of Blood, which were found attached to the inside of one of the veins preserved in the preceding specimen. The section of one coagulum shows that it consists of regularly arranged layers of fibrin. The other coagulum is enclosed in three distinct cysts, of which the outer two are membranous, and the inner consists chiefly of bone. XIII. 108

1603. A portion of an External Saphena Vein, containing masses of calcareous matter, which fill here and there the entire canal of the vessel, the walls being contracted around them. They are probably the remains of blood-clots.

From the body of a man, aged 46 years, brought into the dissection rooms.

1604. A long and slender branching piece of Bone, from the liver of a Sheep. It was probably formed in obliterated branches of the portal vein. XIII. 93

OBLITERATION OF VEINS.

1605. Portion of a Vena Cava Inferior, from a woman, aged 35 years, who died with epithelial cancer of the uterus, and amyloid degeneration of the liver, spleen, kidneys, and small arteries of the intestines. The cavity of the vein is completely obliterated for about one inch, from a point just below the entrance

of the right renal vein. The left renal vein is impervious, the blood from the kidney having returned, partly by a vein passing into the suprarenal capsule, but principally by a large vessel passing downwards and backwards to a venous plexus on the sides of the vertebræ, through which the blood from the lower part of the body appears to have reached the vena azygos, which was of unusual size. The obstruction appears to have been occasioned by the organization of a clot. She suffered from dropsy about ten months before death, from which she recovered. The feet and legs were swollen for the last two months of her life.

1606. A Vena Cava Inferior obliterated. The preparation consists of the remains of the vena cava, the right kidney, and a firm fleshy tumour, which has been formed between them. A great part of the kidney is absorbed. The vena cava is obliterated from its bifurcation almost to its termination in the auricle. The upper part of the vein is distended by fibrinous substance, which appeared to have been separated from the blood. Below this the vein could not be traced; it appeared to be completely lost in the diseased structure. XIII. 29

Vide Nos. 1396. 1539, 1555.
Compression of Veins, vide Nos. 1555, 1556, *Series VIII, and p.* 238.

INJURIES OF VEINS.

RUPTURE.

1607. Portion of a Vena Cava Inferior, in which there is a transverse lacerated aperture, about two inches above the iliac veins. XIII. 71

From the same person as the ruptured bladder, Series XXIX, No. 2441, and the ruptured intestine, Series XVIII, No. 2040.

1608. A Femoral Vein, in which, within the length of six inches, there are seven distinct lacerations through its coats. XIII. 117

The injury was produced by a cart-wheel passing over the thigh. The femur was not fractured, and there were but slight appearances of external injury. The patient, a middle-aged man, died with other injuries received at the same time.
Vide Series VIII, Nos. 1379, 1462.

SERIES X.

DISEASES AND INJURIES OF THE LARYNX AND TRACHEA.

OSSIFICATION OF CARTILAGES OF LARYNX AND TRACHEA.

1610. A Larynx from an old woman. The thyroid, cricoid, and arytenoid cartilages are almost entirely ossified. Osseous matter is also deposited in one of the thyro-hyoid ligaments, and in the epiglottis. xxv. 18

1611. Portion of a trachea from an old man. The cartilages are all ossified. xxv. 20

EFFECTS OF INFLAMMATION.

ŒDEMA GLOTTIDIS.

1612. The Larynx with a part of the Trachea of a man who died with acute laryngitis. The mucous membrane covering the epiglottis, and lining the whole interior of the larynx, is swollen by a copious effusion of serum and lymph in its tissue. The ventricles of the larynx are nearly obliterated by the swelling of the membrane and the consequent approximation of their borders. A small quantity of lymph is effused on a part of the mucous membrane over the right side of the epiglottis and thyroid cartilage. xxv. 7

The patient was about 50 years old, and was healthy until within thirty hours of his death, when signs of acute laryngitis ensued. When brought to the Hospital suffocation was imminent. Tracheotomy was immediately commenced; but he died before the operation was completed.

1613. A Larynx, with the Tonsils, Uvula, a part of the Tongue, Trachea and Pharynx, the latter having been laid open from behind. The mucous membrane lining the epiglottis, and upper part of the larynx, the tonsils, and uvula, is swollen and œdematous, so that the entrance to the pharynx is almost obliterated, and that of the larynx reduced to a narrow chink. xxv. 31

1614. Extreme œdema of the Glottis, Epiglottis, and Pharynx, producing death by suffocation. 59

From the collection of J. R. Farre, Esq., M.D.

1615. A Larynx, of which all the mucous membrane is upraised, and the glottis much narrowed, by œdema. The epiglottis is thickened, and its edges turned backwards and downwards. The œdema extended, also, down the pharynx and œsophagus, and was attended, in the recent state, with the characters of active inflammation. xxv. 29

These changes appear as the consequences of the lodgment of a fish-bone across the fauces, immediately in front of the epiglottis. The patient was an elderly woman, with disease of the

heart; and neither her complaints, nor any symptoms observed during life, indicated the obstruction in her larynx: though it probably existed for at least two or three days before death. *Vide* No. 1629.

CROUP AND DIPHTHERIA.

1616. Part of a Tongue, with the Larynx, Trachea, and primary branches of the Bronchi of a child who died with croup. The mucous surface is covered by a tough membrane, which is scattered in shreds over the larynx: but, from the lower border of the thyroid cartilage downwards, it forms a continuous and perfect tube, which has been laid open in the preparation. In the bronchi it completely fills their canals. XXV. 30

1617. The Larynx and Trachea of a child who died with croup. A continuous thin and very delicate layer of lymph is deposited upon the mucous membrane lining the larynx, trachea, and main bronchial tubes. XXV. 11

1618. The Larynx, Trachea, and Bronchi of a child who died with croup. The mucous membrane is covered by an abundant but not continuous deposit of lymph, which extends from the inferior surface of the epiglottis to the main bronchi. Tracheotomy was performed for the relief of dyspnœa. XXV. 15

Presented by Herbert Evans, Esq.

1619. The Larynx and Trachea of a child who died with croup. A thin layer of lymph, of a greenish colour, extends from the under surface of the epiglottis to about half an inch below the cricoid cartilage. XXV. 6

1620. Diphtheritic inflammation of the Larynx, Trachea, and Bronchi. 64

From a woman.

From the collection of J. R. Farre, Esq., M.D.

1621. A Larynx and Trachea, of which the mucous membrane is almost uniformly lined by a thin layer of lymph, which is slightly adherent, and is rough and granulated on its inner surface. XXV. 19

The patient, a woman, 25 years old, had had fever. During her recovery, but while she was very weak, symptoms of acute laryngitis ensued, for which laryngotomy was performed on the third day. She lived twelve hours, and after death all the bronchial tubes were found similarly lined by lymph. The case, related by Sir Wm. Lawrence, is in the *London Medical Gazette*, vol. xxvi, p. 307, 1845.

1622. The Larynx and Trachea of a child who died with diphtheria. A false-membrane is seen covering a considerable portion of the mucous surface of the larynx. XXV. 40

ULCERATION OF THE MUCOUS MEMBRANE OF THE LARYNX.

1623. A Larynx and Trachea. The whole of the mucous membrane covering the inferior surface of the epiglottis, and lining the larynx and trachea, presents closely set, minute, and, for the most part shallow, ulcers, which have in some places coalesced, so as to give the appearance of diffuse superficial ulceration. Near the posterior extremity of each chorda vocalis there is a small, oval, excavated ulcer, the result probably of tubercular disease. The uvula is bifid. XXV. 3

1624. A Larynx and Trachea, with the base of the Tongue and the adjacent parts. The upper two-thirds of the epiglottis has been destroyed by ulceration, and all the adjacent part of the mucous membrane, as far down as the chordæ vocales, is deeply ulcerated. There is also a distinct oval ulcer on the mucous membrane, near the posterior attachment of the true vocal cords. The ulceration is irregular on each side, but exactly symmetrical; it does not extend down to the cartilage. XXV. 27

1625. A Larynx, exhibiting a large well-defined ulceration of the mucous mem-

brane extending into the substance of the cricoid cartilage, which is partially ossified. Around the ulcer the mucous membrane is thickened and puckered. XXV. 8

From a woman 24 years old, who had had signs of laryngitis for a week, and died suffocated by the closure of the glottis.

1626. A Larynx, with the Tongue. The mucous membrane covering the epiglottis and the upper part of the larynx is thickened and superficially ulcerated. XXV. 14

From a negro, 24 years old, who had had elephantiasis for two years. He died with gangrene of the lungs, and the mucous membrane of the tongue, soft palate, epiglottis, and neighbouring parts was found ulcerated.

SYPHILITIC ULCERATION.

1627. A Larynx and Trachea, with the base of the Tongue. The whole of the epiglottis, and part of the arytænoid cartilages with their connecting folds of membrane, have been removed by ulceration. XXV. 5

From a young woman who had long suffered from syphilis, for which she had taken large quantities of mercury.

1628. A Tongue, with part of a Larynx, in which a circumscribed irregular ulceration has destroyed the epiglottis, the right arytænoid cartilage, and the fold of mucous membrane connecting them. XXV. 24

1629. A Larynx, exhibiting considerable swelling of the right arytæno-epiglottidean fold and the tissues above the right false vocal cord. Immediately beneath the right true vocal cord there is a slit-shaped ulcer, extending along nearly its whole length. The ulcer leads into a small, but deep cavity, containing *débris*. A similar, but smaller ulcer is seen immediately beneath it. XXV. 46

From a man, aged 42 years, who was admitted to the Hospital, suffering from considerable dyspnœa. He had had laryngeal symptoms for about three months. Tracheotomy was performed shortly after his admission, and he lived three days after the operation. There was a history of primary syphilis seven years previously, and at the time he had gummatous syphilitic disease of the tongue. On post-mortem examination the rima glottidis was found completely closed by œdema of the cellular tissue about the right arytæno-epiglottidean fold, which formed a soft well-defined tumour about the size and shape of a cob-nut.—See *Darker Ward Book*, vol. ii, p. 63.

1630. The Larynx of a man, aged 50. He was admitted into the Hospital with loss of voice and other symptoms indicating disease of the larynx, the origin of which was referred to syphilis. He never complained of, or seemed to experience, any difficulty in swallowing. Death took place rather suddenly from softening of the brain. The larynx is laid open from behind, and the mucous membrane is seen to be thickened and indurated throughout. In different portions there is evidence of former ulceration. No traces of the epiglottis are visible; it appears to have been wholly destroyed, a slight ridge only marking its place of attachment. XXV. 39

Vide No. 1634.

TUBERCULAR ULCERATION OF THE LARYNX.

1631. A Larynx from a man, aged 32, who died of phthisis. A superficial ulcer extends along the whole length of the free margin of both vocal cords. There is also an oblong superficial ulcer on the mucous membrane close to the posterior attachment of the right cord. The mucous membrane covering the larynx and epiglottis is injected, but otherwise healthy.—See *Post Mortem Book*, vol. vii, p. 234.

1632. A Larynx with part of the Trachea, from a man in whom tracheotomy was performed two days before death. Upon the epiglottis, the arytænoid cartilages, and the chordæ vocales, the mucous membrane is thickened, ulcerated, and granular. Within the trachea, and especially upon its posterior wall, there is an

almost continuous ulceration, which in some parts is superficial, in others extends deeply, and which at one point has formed an irregular opening through the walls of the trachea. XXV. 23

The patient died with phthisis. Tracheotomy was rendered necessary by imminent danger of suffocation; and the signs of the disease of the larynx had nearly concealed those of the disease of the lungs. The case is related by Sir George Burrows, Bart., in the *London Medical Gazette*, vol. xxi, p. 50. London, 1837.

1633. Portion of a Larynx, exhibiting an irregular, probably tubercular ulceration of the mucous membrane covering the vocal cords; the remaining tissue is so thickened that the rima glottidis is nearly closed. XXV. 2

1633a. A Larynx. The whole of the upper part of the larynx, from the base of the epiglottis to the glottis, presents a deep, irregular ulceration of the mucous membrane; the false vocal cords are destroyed. The true vocal cords are almost completely destroyed, and the mucous membrane below them is superficially ulcerated.

From a man, aged 39 years, who died of phthisis.—See *Post Mortem Book*, vol. viii, p. 113.

THICKENING AND INDURATION OF THE MUCOUS MEMBRANE.

1634. The Tongue and Larynx of a man who for some years before his death had suffered severely from syphilis. He died suddenly, apparently suffocated. The mucous membrane covering the larynx, epiglottis, base of the tongue, and surrounding parts, is much thickened and indurated. The papillæ circumvallatæ are considerably enlarged. XXV. 36

A drawing is preserved, No. 124.

Presented by Mr. Langmore.

STRICTURE OF THE LARYNX.

1635. The Larynx and Trachea of a man on whom the operation of tracheotomy was performed twelve years before death. The opening into the trachea is situated immediately below the cricoid cartilage. The rima glottidis is almost closed by the thickening and contraction of the mucous membrane lining the larynx. The chordæ vocales also are so much shortened that the arytænoid cartilages are within a quarter of an inch of the angle of the thyroid cartilage. The trachea is healthy. XXV. 12

The patient continued to the time of his death to breathe easily through a canula in the opening made in the operation.

NECROSIS OF THE LARYNGEAL CARTILAGES.

1636. A Larynx, in which there is necrosis with separation of a large portion of the cricoid cartilage. Previous to the necrosis the cartilage had become calcified. The separated portion lies in a large cavity like an abscess in the walls of the larynx. XXV. 1

1637. A Larynx, exhibiting the destruction of great part of the thyroid, cricoid, and arytænoid cartilages, by ulceration. XXV. 4

Previous to the ulceration the diseased cartilages were ossified. The patient died suffocated, after a short illness. The mucous membrane about the diseased cartilages was very œdematous.

1638. A Larynx, in which an abscess formed around the greater part of the thyroid cartilage. A large portion of the right ala of the cartilage is destroyed by ulceration; nearly all the rest of both its surfaces is exposed, and there is a large opening of communication between the abscess and the interior of the larynx. XXV. 16

From a man, 27 years old, who had ulceration of the tonsils and the back of the pharynx. He died from gradual exhaustion.

1639. A Larynx, exhibiting necrosis and separation of the left arytænoid cartilage, and of part of the cricoid cartilage. Previous to the necrosis the separated

portions of cartilage had become calcified. Tracheotomy was performed for the relief of dyspnœa. XXV. 9

The patient, a man between 40 and 50 years old, had been profusely salivated for syphilitic disease. After this, dyspnœa and other signs of obstruction in the larynx gradually increased for a month; and when they had been for several days extremely severe, an opening was made through the cricoid cartilage and the first ring of the trachea. The patient lived eight days, and died with pleurisy. The case is related by Sir Wm. Lawrence, in the *Medico-Chirurgical Transactions*, vol. vi, p. 223. London, 1815.

Vide also Nos. 1640, 1641, 1643, 1644.

AFFECTIONS OF THE LARYNX IN TYPHOID FEVER.

1640. A Larynx. Immediately behind the posterior attachment of each true vocal cord there is an oval ulcerated aperture, leading into a cavity formed by the separated perichondrium, and containing the necrosed arytænoid cartilages, bathed in pus. The cavity on the right side is laid open to show the necrosed arytænoid cartilage. The larynx presents no other abnormal appearances.

From a man, aged 36 years, who died of exhaustion from typhoid fever, on the fifty-third day of his illness. He was progressing favourably, when, a fortnight before his death, the temperature again rose, but no laryngeal symptoms were observed. On post-mortem examination the intestinal ulcers were found to be healing.—See *Matthew Ward Book*, vol. vii, p. 194; *Post Mortem Book*, vol. xii, p. 233.

1641. A precisely similar specimen.

From a female, aged 27 years, who died of typhoid fever on the twenty-fourth day of her illness. She was progressing fairly well until three days before her death, when hoarseness of the voice was noticed. On the day preceding her death she complained of pain in the throat; dyspnœa came on, and she died exhausted. On post mortem examination some œdema of the arytæno-epiglottidean folds was observed. Healing appeared to have commenced in the intestinal ulcers.—See *Post Mortem Book*, vol. v, p. 218; also, an account of this case, the preceding, and No. 1643, by Mr. Eve, in the *Trans. Path. Soc.*, vol. xxxi, 1880.

AFFECTIONS OF THE LARYNX IN VARIOLA.

1642. The Larynx and Trachea of a patient who died with small-pox. Lymph is thinly deposited over the surface of the mucous membrane. XXV. 13

1643. A Larynx, showing perichondritis as a sequela of Small-pox. A considerable extent of the upper margin and posterior surface of the cricoid cartilage is laid bare by the separation of the infiltrated and discoloured perichondrium. The arytænoid cartilages are necrosed, and lie loose within the separated perichondrium; the crico-arytenoid articulation is destroyed. A small oval ulcer close to the posterior attachment of the vocal cords on either side leads into the cavity beneath the perichondrium. The arytæno-epiglottidean folds are swollen, as is also the epiglottis. The mucous membrane of the larynx and of the trachea is injected. Immediately beneath the cricoid cartilage a tracheotomy opening is seen.

The specimen was taken from a man recovering from a bad attack of unmodified confluent small-pox. Laryngeal symptoms were first observed shortly after the subsidence of the secondary fever, on the twenty-first day from the commencement of his illness. Tracheotomy was performed for the relief of dyspnœa, but the patient died on the second day afterwards.

Presented by Mr. Strugnell.

1644. A Larynx and Trachea. Just above the vocal cords there is a fistulous ulcer beneath the mucous membrane of the back of the larynx, in front of the arytænoid cartilages. Part of its course is marked by a bristle. The mucous membrane covering the whole of the larynx and trachea is thickened, and rough on its internal surface, as if by a thin deposit of lymph. Near the attachment of the epiglottis are several small superficial ulcers. The arytænoid cartilages have disappeared. They were probably necrosed, and fell out from the abscess cavities. XXV. 10

The patient died with small-pox.

TUMOURS CONNECTED WITH THE LARYNX.

PAPILLOMA, &c.

1645. The Larynx of a child 2 years old. The surface of the mucous membrane lining the thyroid cartilage, the ventricles of the larynx, and the lower part of the epiglottis, is occupied by a wart-like growth composed of numerous small, oval, pedunculated bodies, closely set together, and of a firm consistence. XXV. 17

The child had had dyspnœa from the time of birth, and died suffocated.

1646. The Larynx of a child. The cavity of the larynx is almost entirely occupied by a warty growth, projecting from its mucous membrane. XXV. 25

The child was 3 years old, and had dyspnœa and cough from a week after its birth. It died with symptoms like those of croup. Tubercles were found in the lungs, spleen, liver, and mesenteric glands.

Presented by H. Bateman, Esq.

1647. A Larynx and adjacent parts. A papillomatous growth springs from the surface of and the mucous membrane immediately below the left true vocal cord. A smaller linear extension of the growth also springs from the mucous membrane below the right vocal cord.

The microscopic characters of the growth were those of true papilloma.

From a boy, aged 9 years, who had suffered from symptoms of laryngeal obstruction for about six months. During the three weeks preceding his death he had occasional violent attacks of dyspnœa, one of which ultimately proved fatal.—See *Pitcairn Ward Book*, vol. ii, p. 271.

1648. A Larynx and part of a Trachea. Irregular, soft growths are abundantly clustered about the vocal cords and ventricles. They project into the canal of the larynx so as almost to close it. In structure they resemble imperfect fibro-cellular tissue. XXV. 38

From a boy, aged 12 years, who, twelve months before his death, caught cold and suffered for a time with loss of voice. Treatment failed to benefit him, the aphonia persisting and being, before long, associated with dyspnœa. Respiration was attended with a stridulous sound. He continued his occupation without hindrance. Death took place suddenly from apnœa.

Presented by Mr. Phillips.

1649. A Larynx laid open. A large growth springs from each vocal cord. That on the left side is covered by warty and fine villous processes. The surface of the growth on the right side is smooth. They appear to have almost completely obstructed the glottis.

From a man, aged 56 years, who for some months had suffered with extreme hoarseness, and later with considerable difficulty of breathing, with cough, and occasional paroxysms of severe dyspnœa. He, however, continued his occupation as a cabman until a fatal paroxysm occurred, and was brought to the Hospital dead.

POLYPUS.

1650. A Larynx. On the upper end and inner aspect of the right true vocal cord, at the junction of its anterior and middle third, there is a small, conical, highly vascular polypus.

From a man, aged 63 years, who died of phthisis. There was no history of any laryngeal symptoms.

1651. A Larynx, having two elongated, soft polypoid-looking growths attached to the false vocal cords on either side, and overlapping the ventricles of the larynx. They appeared to be composed of a fold of mucous membrane.

From a middle-aged man, who died of phthisis. He had no laryngeal symptoms, and there was no ulceration of the larynx.

EPITHELIOMA.

1652. A Larynx laid open from behind, showing an epithelioma which is attached to the right arytæno-epiglottidean fold. XXV. 33

Microscopic sections are preserved, No. 67.

1653. A Pharynx, with the Tongue, Larynx, and other parts. A tumour, probably an epithelioma, of almost globular form, and nearly an inch in diameter, is situated on the right arytæno-epiglottidean fold. The surrounding mucous membrane is deeply wrinkled; the fluid by which it was rendered œdematous having escaped. XXIV. 17

The patient, a man about 40 years old, had for some months suffered with pain in the throat, and difficulty of breathing and deglutition. He stated that these were always relieved by the discharge of matter, but the only source from which these discharges appeared to have taken place was a small abscess in the left tonsil. A sudden attack of extreme dyspnœa coming on, tracheotomy was performed, but the patient shortly after died.

A drawing is preserved, No. 128.

1654. A Larynx, at the upper part of which there is a large and very firm tumour, probably an epithelioma. The tumour is attached by a broad base to the left upper border of the thyroid cartilage and to the adjacent tissue; it occupies nearly all the space between the epiglottis and arytænoid cartilages, leaving only a narrow chink at the right side for the admission of air to the glottis. Its surface is irregular and slightly ulcerated. XXV. 28

From a man 60 years old. The disease had been in progress for at least fifteen years; but its effects were not severe till shortly before his death.

1655. The Larynx, Pharynx, and base of the Tongue shown from behind. The base of the tongue, the tonsils, and portions of the larynx are involved in an epithelial growth. XXV. 35

Removed from a man in whom there was, likewise, an epithelioma of the scrotum.

1656. A Larynx, with some of the contiguous lymphatic glands. There is a flat spongy growth, probably an epithelioma, on the mucous membrane covering the epiglottis, and the superior orifice of the larynx. A part of this growth has ulcerated. A deposit of soft substance nearly fills the enlarged lymphatic glands. XXV. 22

MALIGNANT GROWTHS SECONDARILY IMPLICATING, OR COMPRESSING THE LARYNX.

1657. A Larynx with the adjacent structures. A ragged cavity of considerable size is seen by the side of the left thyroid cartilage. It communicated by a sloughing sinus with an ulcer of the integuments, and with the pharynx by a small aperture above the thyroid cartilage. The superior cornu of the os hyoides, rough and bare, projects into the cavity. The base of the ulcer of the integuments was hard, ragged, and made up of white curdy matter, containing well-marked cancer cells. The left lobe of the thyroid body was infiltrated by a similar growth, but the isthmus and right lobe were normal. The mucous membrane of the pharynx was natural.

From a man, aged 57 years, who died in the Hospital. He had suffered for nine months from spasm of the glottis, frequent dyspnœa, and swelling of the parts in front and to the left side of the neck. The induration was succeeded by a foul indolent ulcer. Death took place rather suddenly after a severe attack of dyspnœa.

1658. A Larynx and the adjacent structures. A hard cancerous tumour involves the tissues on the left side of the larynx and infiltrates the wall of the pharynx. The wall of the larynx is bulged inwards by the pressure of the tumour and the glottis is thereby considerably narrowed.

From a man, aged 63 years. Laryngeal symptoms had existed for about six months. Death took place after the performance of tracheotomy for the relief of dyspnœa.

A microscopic examination of the tumour showed the ordinary characters of cancer.—See *Pitcairn Ward Book*, vol. iii, p. 271.

SPECIMENS ILLUSTRATING TRACHEOTOMY AND LARYNGOTOMY.

1659. A Larynx and Trachea, on which the operation of tracheotomy had been performed a long time before death. A fistulous aperture remains.—*Vide* also Nos. 1612, 1618, 1621, 1629, 1632, 1635, 1639, 1643, 1658. XXV. 37

FOREIGN BODIES IN THE AIR-PASSAGES.

1660. The Larynx of a child 3 years old, who was suffocated by a pill lodging just beneath the vocal cords. Small portions of the pill lie loose at the bottom of the bottle, but the greater part of it has been dissolved by the alcohol; the mucous membrane is stained by it. XXV. 26

1661. A small rounded piece of cancellous Bone, rather larger than a pea; it is extremely light and the surface is slightly rough.

It was coughed up by a gentleman twenty-three days after it had passed into the air passages. While eating some veal he choked and afterwards felt a sensation "as if something were sticking somewhere," although he could swallow with ease. He passed a bad night suffering much from difficulty in breathing. In travelling to town next morning to consult a surgeon, the shaking of the railway carriage much relieved him. A distinguished surgeon, whom he consulted, told him that the bone had probably passed down, but that he seemed to have a cold. During the next week he suffered "as from asthma, the want of breath causing acute pain in mounting stairs." Lying on the right side invariably increased the wheezing and brought on coughing. Twice he had violent convulsive fits of coughing. Treatment was directed to the bronchitis which existed, but without relief. The cough became more troublesome, and he could keep nothing on the stomach. After passing a very bad night, he "with one cough brought up the piece of bone," experiencing immediately perfect relief.—See *St. Bartholomew's Hospital Reports*, vol. xvi, 1880.

Presented by Dr. Gee.

1662. A Plum-stone which was removed from the trachea of a girl. XXV. 34

INJURIES OF THE LARYNX.

1663. A Larynx and Os Hyoides, partially separated by a transverse incised wound, which was the cause of death. XXV. 32

1664. The Larynx and adjacent parts of a man who was brought to the Hospital dead, having received a severe blow on the front of the neck. The larynx, with the anterior third of the cricoid cartilage, is torn from its connection with the posterior portion of the cricoid, which is still attached to the trachea. The torn edge of the mucous membrane is folded over the orifice of the trachea.

SERIES XI.

DISEASES AND INJURIES OF THE PLEURA, BRONCHIAL TUBES, AND LUNGS.

DISEASES OF THE PLEURA.

EFFECTS OF INFLAMMATION.

ADHESIONS AND FALSE MEMBRANES.

1665. Portion of a Lung, from the surface of which a layer of false membrane formed upon the pleura has been reflected. The substance of the false membrane is compact and firm; but its free surface is shreddy. The pleura exposed by its reflection is thickened and opaque. XIV. 2

1666. Part of the upper lobe of a Lung. Its pleural covering is thickened. In its layers, and between its inner surface and the pulmonary lobe, there is a scanty accumulation of adipose tissue. XIV. 73

1667. Portion of a Lung, exhibiting a circumscribed cavity lined by a layer of false membrane with a smooth inner surface. It is uncertain whether the cavity be that of an abscess of the lung, or a cavity formed between the lobes of the lung, the surfaces of which are in other parts united by false membrane. XIV. 10

Vide Nos. 1676, 1681, 1698.

THICKENING AND INDURATION OF ADHESIONS.

1668. Portion of Pleura Costalis, thickened and indurated, so that it resembles a layer of cartilage. XIV. 1

1669. Portion of a Lung, in which there is a circumscribed cavity lined by a thin layer of false membrane. The surrounding substance of the lung is indurated and contracted, and contains some other similar cavities of smaller size. The pleura is much thickened and indurated, and its layers between the lobes of the lung are united. XIV. 18

It is probable that the cavities were formed in the progress of tubercuious disease.

1670. Extreme thickening, with adhesion, of the Pleural Layers, the result of repeated inflammation. 89

From the collection of J. R. Farre, Esq., M.D.

Vide No. 1675.

CALCIFICATION OF FALSE MEMBRANE.

1671. A large portion of bone-like substance, which formed in a false membrane uniting the opposite surfaces of the pleura. XIV. 39

The patient was an old man, who had long had dyspnœa and was subject to frequent affections of the chest.

1672. Part of a Bone-like Plate removed from the right pleura. XIV. 71

From the body of a man, aged 40, who died on board H.M.S. "Briton" from bronchitis of long standing. The right pulmonary pleura was found everywhere adherent to the parietal layer, so that much force was necessary to detach the lung. The whole of the right cavity of the chest was lined with what looked like a firm bony covering, which was thickest near the spine and angles of the ribs, becoming gradually thinner as it approached the cartilages. In the thickest part it measured more than half an inch, and had the appearance of having been deposited in layers; for on breaking off masses—and it required considerable force to do this—pus exuded in small quantities from between the laminæ, of which it was composed.

Presented by Frederick Jowers, Esq.

1673. An irregular bony plate, which was removed from the left pleural cavity of a man, aged 55; it was firmly adherent by dense fibrous bands to the costal and visceral pleura on either side. The apex of the left lung presented evidence of phthisis. There was advanced calcareous degeneration of the arteries. XIV. 90

Presented by F. A. Hallsworth Esq.

1674. A portion of false membrane which has undergone calcareous degeneration.

From the collection of J. R. Farre, Esq., M.D.

Vide No. 3224, Series L.

SUPPURATION.

1675. Portion of a Lung, with the Pleura covering it, and the pleura which lined the corresponding part of the chest. Both these layers of pleura are considerably thickened, especially in the lower part; and the sac of the pleura is almost completely obliterated by the adhesion of their opposite surfaces. XIV. 38

The patient was a woman, 30 years old, who, eighteen years before death, coughed up a large quantity of pus, which, it is presumed, had been contained in the cavity of the pleura. The corresponding side of the chest was very much contracted.

1676. Portion of a Lung with the corresponding portions of pulmonary and costal pleura, from a case of empyema of long standing. The tissue of the lung is compressed. Both portions of pleura are covered by a layer of organized lymph, a line in thickness and coarsely granulated on its inner surface. The space between these layers was full of pus. XIV. 42

ULCERATION.

1677. Part of a Lung, the substance of which appears to have been filled with diffusely infiltrated tubercular matter. The pleura investing it is thickened, opaque-white, and perforated with numerous sharp-edged, oval apertures, from a line to half an inch in diameter. There are also small pits in the pleura, like incomplete perforations, making progress from its free surface towards the substance of the lung. XIV. 64

1678. Apex of a Lung, from a patient who died with Pneumothorax. On the anterior surface of the lung are two oval apertures, into which portions of glass are passed, and which lead into small tubercular cavities. There is a third aperture near them, of smaller size, and partially closed by false membrane. In the upper part of the lung there is a large cavity; and all the rest of the pulmonary tissue is affected with tubercular disease in different stages. XIV. 40

Vide No. 1688.

DISEASES OF THE BRONCHIAL TUBES.

DILATATION OF BRONCHI.

1679. Dilated Bronchial Tubes, with the pulmonary tissue surrounding them. The diameter of the principal tube, in its recent state, is indicated by the figures attached to the preparation. The lung is consolidated, and infiltrated with a

soft, yellow, granular material. There is no thickening of the bronchial wall. XIV. 74

From an adult male, of a strumous habit, who sank on the ninth day of an attack of pneumonia. Twenty-four hours before death tubular breathing was heard over the entire right side of the thorax.

Neither the history, nor the condition of the bronchi, referred to any previous disease of the lungs.

1680. Portion of a Child's Lung, in which many bronchial tubes are dilated. The first portions of the larger tubes are of their natural size, but as they proceed in the substance of the lung, they become gradually wider; till near the surface of the lung they gradually contract, and appear to end in closed extremities. The walls of the dilated portions are thin, smooth, and not marked, as the others are, by the longitudinal elastic fibres projecting on their surface: the adjacent pulmonary tissue appears healthy. XIV. 54

Vide also the following specimen.

FOREIGN BODIES IN THE BRONCHI.

1681. The lower part of a right Lung. Its pleural surface is closely invested with long-formed false membrane. Its vesicular structure is solidified, void of air, firm and greyish. On part of its cut surface are seen the orifices of numerous enlarged and sacculated bronchial tubes, the mucous linings of which are thick and fibrous. These tubes were filled with thick, greenish-brown material. They are the branches of the inferior divisions of the main branch of the lower lobe of the lung; and in this, the trunk, from which they proceed, there is lodged a brass tip or ferrule of an umbrella-stick, which, though movable, completely fills the tube, and, being closed at its lower end, completely prevented the transmission of air. XIV. 62

This foreign body was accidentally lodged in the bronchial tube three years before the patient, a boy 12 years old, was admitted into the Hospital. He was supposed to have swallowed it, for it produced no difficulty of breathing, either at the time or for many days afterwards. From the time of the accident, however, his health began to fail, and he was supposed to have phthisis; he forgot, or ceased to tell, that a foreign body might have passed into his lung. Thus he was brought to the Hospital, in a dying state, two days before his death. In addition to the changes here shown, there was a large gangrenous cavity in the apex of the right lung; the lower lobe of the left lung was solid, with pneumonia and with gangrenous softening, and in its upper lobe were numerous reddish spots with yellowish centres, as if from inflammation proceeding to suppuration.

The case is fully related in the *St. Bartholomew's Hospital Reports*, vol. vi. p. 187.

1681a. The Lungs of a Child. The trachea and bronchi are laid open along the anterior surface. The right bronchus immediately beyond the branch to the upper lobe of the lung contains a heart-shaped seed, which did not completely fill the tube. The lowest lobe of the right lung is completely collapsed, also the lower half of the middle lobe. The upper lobe contains air. The trachea and both bronchi contained much purulent fluid.

The specimen was taken from a female child, aged 2 years, who without evident cause was seized with a severe fit of coughing, accompanied by distressing dyspnœa and cyanosis, which lasted fifteen to twenty minutes. On the following day, the breathing was whistling, and the third day she had a second attack of dyspnœa and coughing, when she was brought to the Hospital. On admission she was extremely livid, and the respiratory distress was great. Physical examination showed that the lower part of the right lung was collapsed and the heart, in consequence, drawn across to the right side. Tracheotomy was performed, and a pair of curved forceps were passed down the right bronchus without success.—See account of case by Dr. Gee, in the *St. Bartholomew's Hospital Reports*, vol. xvi, 1880; also *Post Mortem Book*, vol. viii, p. 116.

EFFECTS OF INFLAMMATION.

FORMATION OF FALSE MEMBRANE.

1682. A False Membrane, that formed in the trachea and bronchi during an attack of diphtheria. The patient, a girl aged 10 years, had been ill for some days when tracheotomy was performed and the membrane was drawn out through

the wound at the time of the operation. Death occurred on the following day from exhaustion. XIV. 86

1683. Several portions of fibrinous inflammatory Lymph, ejected from the bronchial tubes, to the shapes of which they were exactly moulded. XIV. 65

1684. Ramified and tubular portions of Lymph, which were expectorated. Their form and size indicate that they had been lodged in the bronchial tubes. XIV. 29

Presented by Dr. Pardoe.

1685. Fibrinous casts from the Bronchial Tubes of a young woman, aged 19. XIV. 77

Vide Series X, Nos. 1616, 1618.

ULCERATION AND PERFORATION.

1686. The bifurcation of a Trachea, within the angle of which there are several bronchial glands enlarged, and containing deposits of tubercular matter. From the largest some of the tubercular matter, softened and liquefied, has been discharged through an ulcerated aperture into the right bronchus. XIV. 66

1687. The bifurcation of a Trachea, showing a large oval opening at the outer angle of its right branch, through which a tubercular bronchial lymphatic gland discharged itself. XIV. 63

The patient, a woman, died with advanced phthisis and renal disease.

The case is related in the *St. Bartholomew's Hospital Reports*, vol. v, p. 227.

1688. Portion of the left Lung of a girl, with a large hydatid cyst. The cyst had existed in the pleural cavity, and evacuated its contents through the bronchial tubes a fortnight before the patient's death. There were several ragged apertures on the surface of the compressed lung; a piece of whalebone introduced into one of these communicates directly with a bronchus. XIV. 67

The patient, 23 years old, had been troubled for a year and a half before death with cough and occasional hæmoptysis, and died with symptoms of pneumo-thorax, which ensued suddenly a fortnight before death, and immediately after coughing up a large quantity of watery fluid. There was a large hydatid cyst, containing echinococci, in the liver of the same subject.

The case is narrated by Dr. Kirkes, in the *Medical Times*, 1851, vol. xxiii, p. 10; also in the *St. Bartholomew's Hospital Reports*, vol. iv, p. 83.

Rupture of Bronchus, *vide* No. 1367, Series VII.

DISEASES OF THE LUNGS.

VESICULAR AND SUBPLEURAL EMPHYSEMA.

1689. Dried Sections of a Lung, affected with Emphysema in an extreme degree. The lung is greatly enlarged; none of the vesicular structure remains, but in its place are large and irregular spaces with imperfect partitions formed by the remains of the thin layers and bands of fibro-cellular tissue which separated the pulmonary lobules. The whole of the right lung was in the same state. The left lung was emphysematous in a less degree. XIV. 50

The patient was a middle-aged man, of whose history nothing was known, except that he died with hepatic disease, after having frequently passed gall-stones.

1690. Portion of a Lung, with Tubercles, and enlargement of the air-cells. In some parts the air-cells appear simply enlarged, in others small round cavities are formed by the coalescence of groups of cells. A number of such cavities are situated immediately beneath the pleura. XIV. 11

1691. Dried Sections of a Lung affected with a much less degree of Emphysema. The air-cells are regular in their form and arrangement, but larger than is natural. XIV. 51

1692. Portion of a Lung, dried, with a large membranous sac on its surface, the consequence of distension of the pleura by air effused under it from ruptured air-cells. XIV. 31

1693. Portion of a Lung, exhibiting both the Vesicular and the Sub-pleural forms of Pulmonary Emphysema. In every part there is enlargement of the air-cells. The portions in which this change has taken place in the greatest degree are much paler than the rest of the lung, and are not collapsed. They, therefore, form considerable projections at the edge and on the surface of the lung. In consequence of the rupture of some of the enlarged air-cells, air has passed beneath the pleura, and has elevated portions of it in the form of round membranous sacs. XIV. 32

1694. An Emphysematous Lung. 81

From the collection of J. R. Farre, Esq., M.D.

1694a. Portion of a Lung, on which part of the pleura pulmonalis is distended into a large transparent sac by air effused from ruptured air-cells.

1695. A large Emphysematous Bulla, which comprised one-half of the middle lobe of a lung. The adjoining firm collapsed portion of lung represents the other half of the lobe. There were numerous pleuritic adhesions.—See *Post Mortem Book*, vol. vii, p. 98.

COLLAPSE (and Consequent Induration).

1696. A portion of Lung, indurated and collapsed, and invested by a layer of extremely thickened pleura. XIV. 87

From a patient who suffered from chronic pleurisy.
Vide No. 1688.

EFFECTS OF INFLAMMATION.

PNEUMONIA.

Hepatization and Purulent Infiltration.

1697. Section of the upper lobe of a Lung, the texture of which has been consolidated and rendered hard, dense, and dry by chronic inflammation. It has retained almost exactly the character which it had in the recent state, and is throughout of a pale, dirty white colour, mottled with numerous spots of black deposit. On its cut surface it presents the appearance of numerous very minute bodies like white seeds or grains, not more than one-sixth or one-eighth of a line in length, which are thickly scattered throughout the consolidated substance; but the surface of the section has no generally granulated appearance. XIV. 44

From a man, 48 years old. The signs of pneumonia had existed nearly five weeks.

1698. Portion of the left Lung; its two lobes are firmly united by dense fibro-cellular tissue; its pleural surface is covered with lymph, forming a thin layer above, but becoming thick and tough over the lower lobe. The upper lobe presents a natural appearance; the lower is solid, of a greyish-white colour, more or less discoloured with a black deposit. The air-cells are filled with a firm exudation in the form of minute granules, which give a rough appearance to the surface and determine its colour. XIV. 69

From a man who had suffered from symptoms of pneumonia for seven days preceding his death.

1699. Section of a Lung, of which the whole of the lower lobe is of a pale, but rather bright, yellow colour, from the infiltration of pus. The infiltrated tissue was heavy, but soft and easily broken, and the surface of the section has no distinctly granular aspect. XIV. 46

1700. The lower lobe of a Lung showing grey Hepatization. The section shows the alveoli distended with fibrinous inflammatory products, and blood-vessels occluded with coagula. The pleura is covered by firm fibrinous effusion, which is of considerable thickness at the base. The lung was solid, and non-crepitant.

It was taken from a man who received a blow on the side; ten days afterwards he died of

pneumonia, affecting only the lung on that side, complicated with delirium tremens. No ribs were fractured.

1701. Grey hepatization of the Lung. 71

From the collection of J. R. Farre, Esq., M.D.

1702. Sections of a Lung, the substance of which is rendered uniformly pale and solid, by lymph effused in acute inflammation. XIV. 27

Vide Nos. 1679, 1754.

ABSCESS IN THE LUNG.

1703. Portion of a Lung, in which there is an irregular oval Abscess, with a well-defined wall, smoothly lined by a thin layer of soft false membrane. The cavity was filled with thick yellow pus: branches of blood-vessels project upon its walls; and the surrounding substance of the lung is solid and very vascular, but not infiltrated with pus. XIV. 56

From a man between 50 and 60 years old, who died with aneurism of the arch of the aorta. He was not supposed to have disease of the lungs. The cured popliteal aneurism in Series VIII, No. 1407, was taken from the same patient.

GANGRENE.

1704. A Lung, the lower part of which is in a state of Gangrene. The gangrenous portion is pulpy, flocculent, and of a brownish colour; and there are large blood-vessels extending through it, which have resisted the destructive process. Above, the gangrenous portion the lung is solid and contracted, so that the entire thickness of the organ is here reduced to two-thirds of an inch. Over the seat of the gangrene a large portion of false membrane has formed upon the surface of the lung. XIV. 36

Vide No. 1710.

INFARCTUS.

HÆMORRHAGIC INFARCTUS.

1705. Portion of a Lung, in the tissue of which a firm pale substance is deposited in irregular masses. It is believed, from the history of the case, that these are the remains of blood effused in the form of pulmonary apoplexy. Some of the blood retains its ordinary colour around the margins of the deposits; but the rest has completely lost its colour. XIV. 8

From the same patient as No. 1316 in Series VII.

1706. Portion of a Lung, with effusion of blood in its substance, constituting pulmonary apoplexy. The effused blood forms firm hard masses in the lung; at the borders of the masses, as well as in other parts, the lung appears healthy. XIV. 30

1707. Part of the lower lobe of a right Lung. With the exception of its upper third it is solid, and of a bright crimson colour, owing to the filling of its air-cells with coagulated blood. In the lower third there is a portion marked with black, pigment-like deposits, and circumscribed by a deep red margin. The canals of many of the larger bronchi are still conspicuous. XIV. 72

From the body of a man who had long suffered from cardiac disease, and lately from frequent hæmoptysis.

1708. Sections of a Lung, affected with Pulmonary Apoplexy. In some parts the effused and coagulated blood forms hard, dark, circumscribed masses in the substance and at the borders of the lung: in other and more numerous parts, it appears like close-set, round, and oval spots or blotches of blood in healthy pulmonary tissue. XIV. 55

From a young man who died with an aneurism of the arch of the aorta, the sac of which communicated by three small apertures with the trachea. It was believed that repeated small

hæmorrhages into the trachea had occurred during three or four days before death, and that the blood had flowed down the bronchial tubes into the air-cells.

A drawing is preserved, No. 153.

1709. A left Lung. It is engorged with blood, and over its surface numerous ecchymoses, from the size of a pin's head to that of a millet seed, livid in colour, and slightly raised from the surface, are seen. The right lung was in a similar condition.

From the same child from whom specimen No. 1296, Series VII, was taken.

PYÆMIC INFARCTUS.

1710. Portion of the lower lobe of a Lung, with cavities formed after circumscribed Gangrene. The walls of the largest cavity are defined, and bounded by consolidated pulmonary tissue: they are irregular, and many small vessels are prominent on their surface. In the adjacent part of the lung are two similar cavities of smaller size. The pleura is thinly covered by organized false membrane. XIV. 53

From a boy, 15 years old, who died a fortnight after receiving a severe compound fracture of the skull, which was followed by hernia cerebri. No sign of disease of the chest was observed. He had extensive suppuration between the membranes of the brain.

1711. Portion of the upper lobe of a right Lung, showing Pyæmic Infarctus. One of these—the pleura covering it having sloughed—has burst into the serous sac, leaving an excavated space surrounded by softened lung tissue.

The boy, aged 17, from whom this preparation was taken, died fifteen days after amputation of the left thigh. The left femoral vein was full of puriform fluid, which had a free entrance into the blood. The bronchial glands, the liver, spleen, kidneys, and certain muscles were also the seats of infarcts, and the right hip, elbow, and left sacro-iliac joints contained puriform fluid.

1712. Portion of a Lung, showing numerous round or oval livid patches scattered throughout its substance, but no suppuration.

Similar spots were found upon both surfaces of the heart, and upon the kidneys. From a child, aged 13 months, who died after three days' illness, which commenced with acute necrosis of the tibia. The tibia is preserved in Series I, No. 37.

TUBERCLE AND PHTHISIS.

1713. The Heart and its vessels, with the Lungs, Trachea, and Bronchi of a child who died shortly after birth. The right auricle and ventricle, the pulmonary artery, and the aorta, are laid open, and a bristle is passed through the canal of the ductus arteriosus, which, with the foramen ovale, is still patent. The lungs contain an abundant congenital deposit of soft, yellow Tubercles. XIV. 70

1714. Lungs injected. Their tissues and sub-pleural surfaces are covered with Tubercles, and the bronchial glands are enlarged and indurated. 78

From the collection of J. R. Farre, Esq., M.D.

1715. Portion of a Lung, with small Tubercles scattered through its substance. The lung is minutely injected, but the injection has not penetrated the Tubercles. XIV. 7

1716. Portion of a Lung, with small masses of Tubercular matter very thickly deposited in its substance. They have an opaque yellowish colour, and many of them exhibit minute cavities at their centres. XIV. 9

1717. Section of the apex of a Lung from a young person, exhibiting the deposit of tubercular matter in the form of Miliary Tubercles—small, round, pale masses imbedded in the substance of the lung, and projecting from its torn surface. XIV. 6

1718. Portions of a Lung, in which Tubercular matter has been deposited. In

the upper portion there are numerous Miliary Tubercles, arranged for the most part in groups; in the lower there are several small irregular cavities, surrounded by similar tubercles and by tubercular matter diffusely infiltrated in the substance of the lung. XIV. 12

1719. Portion of injected Lung, with groups of Miliary Tubercles and masses of tubercular infiltration. None of the injection has penetrated the tubercles. The lung was injected from the pulmonary artery. XIV. 28

Presented by Richard Owen, Esq.

1720. Sections of a Lung, with large irregular masses of Tubercular matter infiltrated in its tissue. XIV. 20

1721. Section of a Lung, the whole substance of which is made solid by the infiltration of Tubercular Matter. The dark spots and lines visible in the yellow tubercular matter are produced by the small remains of the substance of the lung. There are also numerous small irregular cavities in the lung, the result of softening of the tubercular matter and ulceration. The boundaries of these cavities are formed by the tubercle softened and broken, and by the remains of the proper substance of the lung. XIV. 33

1722. Section of a Lung, the tissue of which is solid, heavy, and of a pale yellowish white colour, from uniform infiltration of Tubercular Matter. Its pleural surface is covered by a thin layer of tough, false membrane, with small tubercles scattered in it. XIV. 47

1723. Portion of a Lung, exhibiting an extensive destruction of its substance consequent on the formation and progress of Tubercle. The walls of the large cavity which occupies the place of more than half the lung, are composed of the pulmonary tissue, indurated and infiltrated with tubercular matter; and are rendered very irregular by the projection of numerous large branches of the blood-vessels, which have not been involved in the destruction of the adjacent parts. The pleura is thickened, and has soft false membrane on its surface. XIV. 34

1724. Portion of Lung, in which there are several large Tubercular Cavities, with infiltration and induration of the pulmonary tissue remaining between them. Most of the cavities are lined by false membrane in thin and imperfect layers. The pleura is thickened, and false membrane is abundantly formed upon its surface. XIV. 35

Presented by Dr. Conquest.

1725. Portion of the apex of the right Lung. It contains a portion of a Tubercular Cavity, sprouting into which is a small malignant growth, probably secondary to malignant disease of the right supra-renal capsule. Although the vomica itself was evidently of old date, the lungs contained throughout large quantities of miliary tubercle recently deposited, the appearances having been such as to lead to the belief that the diseases had been progressing simultaneously. XIV. 78

From a man, aged 53 years.

1726. Section of the upper part of a Lung, in which a soft material, resembling mortar, and mixed with particles of calcareous substance, has been deposited in small cavities, which, it may be presumed, were previously occupied by tubercular matter. Sections of two cavities are seen filled with this substance; two others have been partially emptied. The surrounding pulmonary tissue is condensed, dry, and of a dark grey colour, from the quantity of black matter deposited in it. The surface of the lung is deeply wrinkled and contracted over the remains of the cavities; and several bands of false membrane are attached to it at the same part. XIV. 41

From a patient who died of a disease independent of this condition of his lungs, and from whom the specimen of partially healed tubercular ulceration of the large intestine, Series XVIII, No. 2016, was taken.

1727. A Tubercular Cavity in the Lung, at the base of which is a small blood-vessel. An aperture exists in the upper wall of the vessel, and to the margin of this a hollow cylindrical clot, which projects into the cavity, is attached. XIV. 76

From a man who died suddenly from very copious hæmorrhage.
A drawing of this specimen is preserved, No. 161.

TUMOURS OF THE LUNGS.

SPINDLE-CELL SARCOMA.

1728. Tumours, having the characters of recurrent fibroid growths, occupying portions of the lungs. They commence in the tissue dividing adjacent lobules, and extend by compressing the neighbouring air-cells. They were secondary to a similar growth involving the uterus. XIV. 75

The case is fully related by Mr. Callender in the *Transactions of the Pathological Society*, vol. ix, p. 327.

EPITHELIAL CANCER (Secondary).

1729. Portions of Lung, containing masses of Epithelial Cancer. In the lower portion an oval mass of the morbid growth, two inches in diameter, is imbedded in the lung, at its root, and a portion projects from it into one of the large bronchi. It is doubtful whether this mass is seated in the lung itself, or in a cluster of bronchial glands. In the upper specimen a mass of large size occupies the very substance of the lung, immediately beneath the pleura. In the interior of this mass is a large cavity, which was filled with pus and softened cancerous matter, and has irregular broken walls formed by the less softened substance. The boundaries of the cancerous growths are well-defined, and the substance of the lungs in which they are imbedded appears healthy. They present a nearly white friable basis substance, soft but dry, marbled with lines and dots of black pigment matter, and (in the recent state) parts of them were suffused with pale yellowish and pinkish hues. In microscopic structure they presented the usual appearances of epithelial cancer, with abundant scale-like, wrinkled, nucleated cells, and epithelial laminated capsules. XIV. 61

The patient was an old man, part of whose penis was removed, on account of cancer, eighteen months before death. The disease returned in the inguinal glands, and presented in them the same characters as it here shows in the lungs. Portions of the glands are preserved in Series XXIV, No. 2287. There were altogether about twenty cancerous masses. Most of them were in the right lung. Many were softened at their centres, or had cavities therein, like the largest here shown.

TUMOURS OF UNCERTAIN NATURE.

1730. Portion of a Lung, in which are several large, round, and lobulated masses of a soft, brown, medullary substance. Most of these are situated near, or project from, the surface of the lung. The substance of the lung adjacent to them appears healthy. XIV. 24

1731. A similar specimen. XIV. 25

1732. A similar specimen. XIV. 26

1733. Portion of a Lung, exhibiting medullary substance infiltrated in large portions of its tissue. XIV. 13

1734. The Right Lung of a child, with several large masses of a soft medullary substance, deposited in both its lobes. XIV. 21

From the same child as No. 2499, in Series XXX, and No. 2290, Series XXIV.

1735. Two portions of a Lung, in each of which there are round masses of a

firm, whitish, medullary substance. The pulmonary tissue surrounding them appears healthy. XIV. 22

1736. Portions of a Lung, in which masses of a firm, white, cancerous substance are irregularly deposited. Some of the small branches of the pulmonary artery are filled with a similar substance, which appears in them like fine ramifying lines in the substance of the lung. XIV. 19

1737. Portion of Lung containing an irregular mass of New-Growth. 82

From the collection of J. R. Farre, Esq., M.D.

1738. Rounded masses of New-Growth seen on the cut surface of a portion of lung. 85

From the collection of J. R. Farre, Esq., M.D.

1739. Masses of New-Growth in Lung Tissue. Some of them are softened and disintegrated, and some making their way through the pleura project into the serous sac. 86

From the collection of J. R. Farre, Esq., M.D.

1740. Portion of a Lung, in which there are several circumscribed deposits of a very firm, white and greyish, New-Growth. Most of the deposits are on the surface of the lung and are flattened by the resistance of the wall of the chest. They are from a quarter to half an inch in diameter and irregular in their forms. The adjacent tissue of the lung is healthy. XIV. 43

From the same patient as the sarcomatous tumours of the breast, Nos. 3163, 3164, in Series XLVIII, and No. 1903 in Series XVII.

1741. Section of both Lungs, and of the parts contained in the upper portion of a Posterior Mediastinum, all involved in a large New-Growth (? lympho-sarcoma). At and near the middle of the specimen appear the sections of the left bronchus, the arch of the aorta pushed to the left, the left vena innominata similarly displaced, the left pulmonary artery and veins. All these are much compressed by the cancerous mass surrounding them. Numerous bronchial glands, filled with cancerous matter, are imbedded in the same mass. Similar cancerous deposits in the right lung occupy nearly all its natural textures, leaving only black lines and spots marking their former places and arrangement. The left lung (part of which is shown at the back of the specimen) was healthy. The New-Growth is milk-white, or greyish-white; in some parts firm, in others soft, and easily reduced to pulp. XIV. 68

The patient was a porter, 33 years old. He had had cough and dyspnœa for about twelve months; and, for about ten weeks, had increasing œdema, and other signs of venous obstruction, in the head, face, and upper extremities, which gradually extended to the abdomen and lower extremities. The only considerable disease, in addition to those mentioned above, was dilatation of the bronchi of the right lung, which appeared like cavities filled with pus.

The case is fully related in the *St. Bartholomew's Hospital Reports*, vol. iii, p. 183.

1742. Portion of a Lung, showing small roundish white Tumours on the surface of the pleura. XIV. 68

From a man, aged 54 years, who died with effusion into the right pleura. He had been ill for three months, with pleuritic effusion, and was thrice tapped.

Presented by Mr. Marriott.

1743. Portion of a Lung, containing Tumours of lobular form, white, obscurely fibrous, and as hard as cartilage. The pulmonary texture adjacent to the tumours appears healthy. The largest tumour projects beyond the surface of the lung, and has some black substance deposited in it. XIV. 3

1744. Part of the apex of a Lung, with a small nodulated fibro-cartilaginous Tumour, which is imbedded immediately beneath the pleura, but projects beyond the surface of the lung. All the adjacent tissues appear healthy. XIV. 59

The patient, a girl, died with pneumonia in the lower lobe of this lung.

EXCESSIVE PIGMENTATION.

1745. Portion of Lung, with small particles of pigment diffused through its substance. XIV. 37

Presented by Dr. Norris.

HYDATID.

1746. The lower portion of a Lung, showing a hydatid lying immediately beneath the surface.

Vide No. 1688.

DISEASES OF THE PULMONARY ARTERIES.

EMBOLISM AND THROMBOSIS.

1747. A portion of Lung, with the Pulmonary Artery laid open. One of the main branches of the pulmonary artery is obstructed by a large, firm, irregular, decolorised clot, extending to the termination of the branch, where a cavity containing broken down lung substance is seen, lined by a distinct opaque membrane. The lungs were emphysematous, dotted with tubercles, and scarred by old cicatrices.

From a man, aged 65 years. He had been troubled with cough and shortness of breath for years, and was admitted to the Hospital six weeks before his death for apparent obstruction of the veins of the left leg. By rest he seemed to recover. After leaving the Hospital the symptoms of obstruction—swelling and pain—returned, and soon sudden and distressing dyspnœa came on, of which he died.

For other specimens of Embolism and Thrombosis of Pulmonary Artery, vide Series VIII, Nos. 1562, 1563, 1564, 1566, 1567, 1568, 1572.

1748. Portions of the Left Lung of the man from whom Specimen 1595 in Series IX, was taken. Some of the larger branches of the pulmonary artery which have been laid open, show in their interior firm and partly decolorised clots.

1749. Portion of a Lung, in which the main division of the Pulmonary Artery is nearly filled by a firm, grumous, brown and red clot of blood, slightly adhering to its walls, and having all the characters of a clot formed before death. At its distal end the clot divides into four portions, which extend into and nearly fill as many branches of the pulmonary artery in which it lies. One of these portions is intimately united to the wall of the arterial branch in which it is contained. XIV. 48

1750. Another portion of the same Lung. A bristle is passed beneath a narrow band, formed probably by the further organization of blood coagulated during life, within the branches of the pulmonary artery. One of two such bands is attached only at its ends to the inner surface of the branch of the artery: the other is attached by nearly the whole of one of its surfaces to the angle and adjacent parts of a large branching arterial trunk. The clots are firm and pale pink, and have completely coalesced with the wall of the artery. In some of the smaller branches of the artery there are short round grumous coagula, like those described in the last preparation. XIV. 49

The patient, a woman, 70 years old, died after suffering with an affection of the chest, and œdema of the lower extremities, for five weeks. Two days before her death she began to sink rapidly. The case is related by Sir J. Paget, and the Specimen No. 1749 is figured, in the *Medico-Chirurgical Transactions*, vol. xxvii, p. 178, pl. iii, fig. 3. London, 1844.

Drawings of this and the preceding specimen are preserved, Nos. 168, 169.

1751. Portion of a Lung. A firm clot fills the trunk and branches of the pulmonary artery.

1752. A similar specimen.

This and the preceding were taken from the same case as Specimen No. 1569 in Series VIII.

1753. Portion of Lung, with some of the large branches of the Pulmonary Artery laid open, and containing firm, dry, and cylindrical clots of blood, which completely filled their cavities, and had probably been formed several days before death. XIV. 52

From a man, 50 years old, who, while suffering with only slight symptoms of pulmonary disease, died suddenly. The case is related by Sir J. Paget, in the *Medico-Chirurgical Transactions*, vol. xxviii, p. 353. London, 1845.

1754. Sections of the upper lobe of the Lung of a child, consolidated by inflammation. The surfaces of the sections are minutely granular, of a pale, dirty yellowish-white colour, except in two or three places where there are traces of effused blood, and in those parts in which spots of black matter have been deposited. Some of the branches of the pulmonary artery are blocked up by fibrin. There are some thin deposits of firm lymph upon the surface of the pleura covering the upper section. XIV. 45

1755. Part of the lower lobe of the right Lung of a girl who died with an osteoid Tumour in the pelvis. The chief branch of the pulmonary artery is filled with a hard and partly bone-like substance, similar to that of which the growth in the pelvis was composed. From the trunk, portions of similar but less ossified substance, extend into many branches of the pulmonary artery, filling them, and making them feel like hard cords. Many such branches are shown traversing a large cavity formed by softening and imperfect suppuration in the substance of the lung. Similar, but much less extensive disease existed in the left lung. XIV. 60

COMPRESSION OF THE PULMONARY ARTERIES AND VEINS.

1756. Bronchial Glands, with the bifurcation of the Trachea and the adjacent parts. The bronchial glands are much enlarged, and tubercular matter is deposited in them. The vena cava superior is flattened, and its calibre much reduced. Both the main branches of the pulmonary artery are also much compressed by the enlarged glands. XIV. 16

1757. A child's Heart, with a cluster of Bronchial Glands greatly enlarged, indurated, infiltrated with tubercular matter, and compressing the trachea and principal branches of the bronchi and the pulmonary arteries and veins. XIV. 57

Vide Series XIII, Nos. 1475, 1476, 1478, 1485, 1555.

ANEURISM OF THE BRANCHES OF THE PULMONARY ARTERY.

1758. Lower lobe of a right Lung, showing a small cavity the size of a cherry, which contained a clot of blood. The clot proceeded from a rent in an aneurism of the size of a cherry-stone, seated upon a large branch of the pulmonary artery.—See *Post Mortem Book*, vol. iii, Case 218.

For other diseases of Pulmonary Artery, vide No. 1316, Series VII, No. 1448, Series VIII.

INJURIES OF THE LUNG.

1759. Portion of a Lung, showing an extensive laceration on the posterior surface of the inferior lobe.

From the same case as that from which the ruptured heart was taken, Series VII, No. 1364.

N.B.—Diseases of the Bronchial Lymphatic Glands are shown in Series XXIV.

SERIES XII.

DISEASES AND INJURIES OF THE NOSE, MOUTH, TONGUE, PALATE, AND FAUCES.

DISEASES OF THE NOSE.

LIPOMA.

1760. A pendulous Lipoma, which hung from the extremity of the nose and septum nasi. It is composed of tough fibro-cellular tissue.

The specimen was removed from an Italian, aged 53; it had been growing since he was nine years old. A similar, but smaller tumour was attached to the upper lip.—See *Henry Ward Book*, vol. vii, p. 8.

Vide Nos. 2705, 2706, Series XXXV.

1761. Lipoma, probably malignant, removed from a man, aged 20 years, on whose nose it had been growing slowly for twelve months without pain or glandular enlargement. The tumour occupied the whole of the nose from the nasal bones downwards. It was hard, of a dusky red colour, especially at the base, and covered with wart-like nodules. Much hæmorrhage followed the operation. The exposed surface granulated healthily. XXIII. 35

THICKENING OF THE MUCOUS MEMBRANE.

1762. Section of a Nose, in which the mucous membrane covering the posterior portion of the inferior turbinated bone is thick, soft, and spongy; so that in the recent state it resembled a vascular tumour or polypus projecting in the nasal passage. XXIII. 23

GLANDERS.

1763. Portion of the Septum Nasi of a Horse, exhibiting pustules and ulcers of the pituitary membrane. Each separate ulcer is small and circular; but on the posterior part of each surface of the septum there is a large extent of ulceration of an irregular form, probably the result of the coalescence of many small ulcers with each other. XXIII. 21

The disease was produced by inoculation with matter taken from an abscess in the arm of a man who was believed to have been infected by glanders. Previous to the inoculation the horse was healthy.

POLYPI.

1764. Sections of a Nose, exhibiting on each side large soft polypi, which are suspended from the mucous membrane covering the inferior and middle spongy bones. One polypus of smaller size is situated in the frontal sinus. They were probably of gelatinous aspect, though now, having collapsed and fluid having escaped from them, they appear opaque. XXIII. 15

1765. Numerous Polypi removed from the Nose. They are of soft texture,

semi-transparent or gelatinous in aspect, and several of them were attached to the mucous membrane of the nose by long narrow pedicles. XXIII. 7

1766. Polypi removed from the Nose. They are of firm semi-transparent texture, and, with the one which is suspended, a large portion of the inferior spongy bone is connected. XXIII. 9

1767. Two Polypi, like those last described, attached by narrow pedicles to the inferior surface of the body of the sphenoid bone. XXIII. 10

1768. A large lobed Polypus of soft texture, which was extracted from the nose. A portion of it which hung into the fauces is opaque, apparently from the thickening of its investing membrane; the rest is soft and more nearly transparent. XXIII. 24

It was removed from a young lady in whom obscure signs of its existence had been long observed. It was attached to the mucous membrane of the nose by the narrow portion by which it is now suspended. The larger part of it lay in, and projected from, the posterior aperture of the nostrils, through which also the whole mass was extracted by seizing the portion which was hanging in the fauces.

1769. A similar, but larger and more deeply lobed Polypus, which was also extracted through the fauces. XXIII. 25

The patient was an elderly lady. She had long observed the disease, and had herself removed portions of the polypus, by seizing it with pincers whenever she could force it towards the cavity of the mouth, and cutting it with scissors. The part which was thus cut presents a cicatrised surface.

1770. The right side of a Child's head, in which the nasal passages are completely filled by lobulated polypous growths from the mucous membrane. The section of one of the largest growths displays a pale, pinkish, and obscurely fibrous texture, firmer and less transparent than that of the common gelatinous polypi. XXIII. 16

The growth of these polypi was very rapid. They proved fatal by suffocating the child, for they filled the nasal passages and pressed down the soft palate so as to obstruct the fauces.

TUMOURS OF THE ANTRUM AND NOSE.

1771. Part of the right side of a Face, in which the antrum and other nasal cavities and passages are completely filled by a soft medullary tumour, which also projects with an extensive sloughing surface through the skin of the cheek, and through the anterior part of the gum and of the hard palate. XXIII. 8

1772. The Left side of a Face, with a soft Medullary Tumour filling the antrum, and thence extending into the nostrils, and into the cavities of the mouth and orbit. The parts of the tumour exposed are broken and flocculent, as if sloughing. XXIII. 13

Presented by J. H. B. Williams, Esq.

1773. Section of a large Tumour, formed in the face of a lad 16 years old. The greater part of it occupies the situation of the superior maxillary bones, which are completely absorbed. Above, the tumour has extended through the left side of the base of the skull into its cavity, where it forms a large projection in the situation of the anterior lobes of the cerebrum; below, it is united to the soft palate; in front, it protrudes, distends the left nostril, and has caused the ulceration of a part of the integuments of the face. The outer surface of the tumour is nodulated; its interior, shown by the section, is formed of close-set nodules and masses of cartilage, partially and irregularly ossified, and in

some parts intersected by layers of a softer, probably fibrous, tissue. A portion of its external surface, projecting below the left nostril, has sloughed. XXXV. 47

1774. The other half of the Tumour last described. This portion extends into the cavity of the left orbit, and has elongated and compressed the left optic nerve, pushing it to the outer wall of the orbit. The tumour presents the same partially ossified cartilaginous structure as the preceding. XXXV. 48

The Tumour was of very slow growth. *See* Mr. Stanley's *Treatise on Diseases of the Bones*, pl. xvii, fig. 3.

RHINO-PLASTIC OPERATIONS.

1775. The Face of a man, on which a new nose was formed three months before death, from a portion of the integuments of the forehead. XXIII. 26

Some years before the operation the patient had cut his nose off, in a fit of insanity. He died with fever, shortly after the union of the transplanted part was completed.

Presented by F. C. Skey, Esq.

DISEASES OF THE LIPS AND CHEEK.

LABIAL GLANDULAR TUMOUR.

1776. Section of a Tumour removed from an Upper Lip. A portion of the mucous membrane of the lip is closely connected with a part of its surface. The tumour was of spheroidal shape, nearly an inch in diameter, imbedded in the whole thickness of the lip. It is lobed, firm, and elastic, closely connected, but not confused, with the adjacent tissues. Its cut surface is creamy-white and greyish, with ruddy spots. XXXV. 87

The patient was a healthy-looking, middle-aged man. The tumour had been growing for twelve years, and was inconvenient only from its bulk.

Its microscopic structures were those of a conglomerate secreting gland, with tubes lined and partly filled with nucleated cells, wanting only the system of branching ducts. The case is described, and parts of the microscopic structures are represented, in Sir J. Paget's *Lectures on Tumours*, p. 262, pl. 36.

EPITHELIOMA.

1777. An Epithelioma of the Upper Lip. XXXV. 22

Removed from a man, aged 60 years.

1778. Section of a mass of Epithelial Cancer imbedded in the right cheek. It occupies the whole thickness of the cheek, upraising equally the skin and the mucous membrane, and just projecting through them both at small ulcerated apertures. It appears as a circumscribed infiltration of the tissues, of irregular rounded shape, about two inches in diameter. Its section appears opaque-white, with some marks of blood-stains; its substance is firm and close-textured, but friable, not creamy. XXXV. 96

The patient was 37 years old. A year before the removal of this disease, a portion of his lower lip, with an epithelial cancer which had been four years in progress, was excised. Within three months of this second operation, the disease reappeared beneath the scar, and rapidly increased. It was removed, together with a large portion of the lower jaw to which the cancerous substance adhered. The wound did not completely heal; but the cancer which again appeared in it made comparatively slow, though extensive progress. Death occurred nearly three years after the first operation. The lip on which the first operation was performed remained healthy to the last.

There is a drawing of the specimen No. 578.

DISEASES AND INJURIES OF THE TONGUE.

HYPERTROPHY.

1779. A horizontal section of a portion of a Hypertrophied Tongue, removed

by the écraseur from a child, aged 3 years. The tongue had increased in size since the age of sixteen months. The portion removed always protruded from the mouth. The child never complained of it; could masticate without trouble and talk very well. The lower teeth, however, had become pushed downwards and pointed unnaturally outwards from the pressure above. The structure seems to be that of healthy tongue, with a thickened papillated mucous membrane.

FATTY DEGENERATION.

1780. A Tongue reduced to fat from a case of progressive muscular atrophy. The subject was a man, aged 60, who had gradually lost health and strength for two and a-half years before death. At the same time speech and the first act of deglutition failed; he was compelled at last to communicate all wants in writing, and to force food within the grasp of the palatine arches after mastication by means of a common spatula. The tremulous twitchings of the muscles of the tongue, and eventually of others, were remarkable. Becoming slowly emaciated from imperfect nutrition, he died without additional symptoms. The nerve-centres, the nerves, and the organs generally, were examined after death, and presented a natural appearance. The tongue is converted into a mass of fat, and some others of his muscles showed symptoms of the same disease in its earliest stage. XXIII. 32

Presented by Edgar Barker, Jun., Esq.

ULCERATION.

1781. A Tongue, Larynx, and Pharynx. The dorsum of the tongue is occupied by a V-shaped ulcer, which extends along the raphé from base to tip. The ulcer is about a quarter of an inch deep; the edges are steep, ragged, irregular, and infiltrated with tubercular matter. Its base is smooth; here and there the fibres of the transverse muscle are exposed. Both the upper and lower surfaces of the soft palate are covered by ragged ulceration, and the palate is much thickened and honey-combed by small abscesses containing cheesy pus. The root of the tongue is covered by a dense papillated cicatricial tissue, in places ulcerated. The tonsils are normal. The epiglottis is nearly destroyed; its remnant is contracted, dense, puckered, and adherent to the adjacent parts. Both arytæno-epiglottidean folds are destroyed by ulceration, and the mucous membrane covering the interior of the larynx above the glottis is infiltrated, and covered by a similar ragged tuberculated ulceration, which penetrates deeply on the anterior surface. The margin of the left vocal cord is ulcerated, but the right is unaffected.

From a boy, aged 19 years, who was admitted to the Hospital with an extensive superficial ulcer on the tongue and soft palate. He had had a bad mouth for two years and his tongue had been ulcerated during the last three months. There was no evidence of congenital syphilis. The ulcer spread in extent and depth, and he died two months after his admission of hectic and exhaustion. The apices of both lungs were affected with phthisis. A drawing is preserved, No. 186.—See *Pitcairn Ward Book*, vol. vi, p. 82.

1782. The right half of a Tongue, on the border of which is an ulcer, with an uneven, coarsely granulated base, and an inverted and somewhat undermined margin. It has destroyed the whole thickness of the mucous membrane of the tongue, exposing, at irregular depths, the muscular tissue. XXIII. 28

The patient, a man 37 years old, died with advanced tubercular disease of the lungs and larynx. The ulcer of the tongue was of eight months' duration. For a short time before his death it appeared to be healing; but before this time it had presented so close a resemblance to the common tubercular ulcers of the intestines, that it was believed to be of tubercular nature. The co-existent disease in the lungs and larynx, and the absence of any cancerous structures near the ulcer, further justified this belief.

1783. A Tongue, the inferior part of which is, on the right side, completely

destroyed by ulceration. Around the ulcerated surface, the muscular substance is indurated, but has undergone no other obvious change of structure. XXIII. 12

The patient was a woman, 40 years old, who, till within four months of her death, when this disease was first observed, had had good health.

1784. A Tongue and Pharynx, exhibiting extensive sloughing of their mucous membrane, which was considered to be the effect of mercury administered to a syphilitic patient. XXIII. 17

TUMOURS.

FIBROUS.

1785. A two-lobed Tumour, removed from a Tongue, in the substance of which it was imbedded, near the apex. It is about half an inch in diameter, and consists of a succulent, obscurely filamentous tissue, abundantly nucleated. XXXV. 77

The patient was a young man. The tumour was of three years' growth.

CARTILAGINOUS.

1786. The halves of a small Cartilaginous Tumour, removed from the dorsum of the tongue, immediately beneath the mucous membrane. XXXV. 137

From a man aged 23 years.

EPITHELIOMA.

1787. A Tongue, removed for Epithelioma growing from the dorsum. The section shows the manner in which epithelioma extends into the substance of the organ.

1788. The left half of the apex of a Tongue affected with Ichthyosis. On the dorsum there is a raised hard patch and the epithelium covering it is pitted and irregular. A similar patch, somewhat depressed in the centre, is cut across at the margin. The opposite side of the tongue was normal.

Microscopic examination showed that at the raised patches described the disease had given rise to epithelioma.

From a solicitor, aged 64 years, who had suffered from a sore tongue for ten years. He first noticed raised patches of a permanent character three and a half years before admission to the Hospital. The disease, he thought, was originally produced by the irritation of the tongue by some jagged and carious teeth. There was no evidence of syphilis.—See *Pitcairn Ward Book*, vol. vi, p. 331: also a paper by Mr. Eve "On the relation of Epithelioma and Irritation." *British Medical Journal*, April 2nd, 1881.

Microscopic sections are preserved, Nos. 77, 77A.

1789. A Tongue, in which the anterior three-fourths of the upper part are occupied by a circular ulcer, two inches in diameter, with a broken, soft, and shreddy surface. Beneath the ulcer is a layer half an inch thick, in which the substance of the tongue is occupied by a soft and loosely filamentous substance, infiltrated with thin creamy fluid. The margin of the ulcer is nearly surrounded by a hard layer of opaque-white epithelium, which is in parts a line in thickness. Aronnd this layer the tongue appears healthy. APPENDIX. 4

The patient was a man 68 years old. The disease commenced eight years before death in a small, hard, white lump on the middle of the dorsum of the tongue, at a spot on which the end of a tobacco-pipe had often rested. The patient was for several years in the habit of paring this lump with a razor twice a week. It enlarged and extended over all that part of the tongue now occupied by the ulcer, but gave him no inconvenience except from its hardness and the enlargement of the tongue. About four months before death ulceration commenced and extended over nearly all that part of the tongue which had been covered by the thickened epithelium. The tongue at the same time became very large, completely preventing natural deglutition, and the patient died exhausted.

The whole of the morbid substance is composed of large nucleated cells, like those of tesselated epithelium, with small quantities of filamentous tissue and blood-vessels.

Presented by William Taylor, Esq.

1790. Tongue of a man, aged 55 years, removed by Symes' operation of dividing the symphysis of the lower jaw, and excising the whole organ. The tongue is completely infiltrated with epithelioma, and a deep longitudinal fissured ulcer is seen on its superior surface. The disease had existed for nine months.

See *Pitcairn Ward Book*, vol. i, pp. 117 and 124.

1791. Cancerous ulceration of the tongue, from a man, aged 40 years, who died suddenly after one profuse hæmorrhage. The disease had existed five months. The whole right half of the tongue has been destroyed quite to the root, and the surface of the ulcer was in a sloughing state. Immediately in front of the anterior palatine arch the ulcer communicates with a distinct cavity, with sloughing walls, situated below the submaxillary gland and beneath the hyoglossus muscle. Into this cavity the lingual artery opens about three-quarters of an inch beyond its origin. A bristle has been passed from the carotid through the lingual artery into the cavity, and another from the cavity through the opening into the mouth.

1792. A Larynx, with part of the Fauces. A large growth of soft medullary substance, partially ulcerated, covers the base of the tongue, the soft palate, the tonsils, and the upper and posterior walls of the pharynx. XXIII. 3

1793. A mass of soft, spongy, vascular, and apparently medullary substance, which was removed from the surface of a tongue. XXIII. 27

The patient was an elderly lady. On two previous occasions masses like this had grown rapidly, and had been removed. They were so slightly attached that they were peeled off by scraping the surface of the tongue with the fingers. After the removal of this mass, which is of nearly the shape and size of the tongue itself, the disease was speedily reproduced, and ended fatally.

Drawings are preserved Nos. 187, 188.

Presented by Robert Ceely, Esq.

1794. Section of the Tongue of a Cow, from the surface of which there are very large, deeply lobed, and warty growths, probably epitheliomatous. XXIII. 20

INJURIES.

1795. The anterior half of a Tongue, which was bitten off in an epileptic fit. XXIII. 5

The patient recovered and retained the power of articulation.

DISEASES OF THE GUMS, AND HARD PALATE.

EPULIS.

1796. A Tumour removed from the alveolar margin of a superior maxillary bone. It is of round form, and consists of a very firm substance, like fibro-cartilage containing specks of bone. XXIII. 14

1797. Sections of the front of a Lower Jaw, which was removed with an Epulis. The tumour, of a rounded oval form and a firm obscurely fibrous texture, rose to the height of half an inch from the margin of the jaw and overlapped both its surfaces. One of the sections shows that the part of the jaw on which the tumour rested is in its own texture sound; its surface was smooth and the periosteum healthy. I. 247

From a young woman in whom the disease had made slow progress.

1798. An Epulis, removed from the Lower Jaw of a girl. It is of an irregularly oval form, and composed of a firm, white, obscurely fibrous substance, like the

tissue of healthy gum. The narrow base by which it was adherent to the jaw contains numerous osseous spicula. Its free surface is covered by healthy mucous membrane. XXXV. 39

TUMOURS OF THE HARD PALATE.

1799. Section of a Tumour removed from the palate, to which it was attached by a base of much less extent than its circumference. Its surface is covered by thick, but apparently healthy, mucous membrane; and its interior presents a lobulated appearance. XXIII. 22

1800. An elongated oval Tumour removed from the palate, to which it appears to have been attached by a broad base. It is composed of a firm, very close-textured, obscurely fibrous substance, with interspersed specks of bone, like the epulis which more commonly grows from the gums. XXIII. 6

DISEASES OF THE SOFT PALATE AND FAUCES.

ULCERATION.

1801. The Larynx and adjacent parts removed from a man who died under the following circumstances:—He was a soldier, and was admitted into the Military Hospital with a sloughing ulcer of the throat, but without venereal taint. There was considerable loss of substance, and his condition for many days was most critical. He improved under treatment, and rapidly gained flesh. The ulcer appeared to be healing, and he was considered convalescent. While one day sitting up in the ward his mouth was suddenly filled with blood. He ejected about a pint of bright arterial blood, and died before he could reach his bed. On examination after death, it was found that, although the ulcer on the soft palate and back of the pharynx had healed, a small aperture existed behind the remains of the left tonsil which led downwards into a pouch of elongated form, the lining of which was still ulcerated. At the bottom of this pouch a small clot was found adherent, and by carefully tracing the branches of the external carotid it was found that the superior thyroid artery opened into the cavity, and thus caused fatal hæmorrhage. XXIII. 30

TUMOURS OF THE SOFT PALATE.

1802. A small fibrous Tumour removed from the soft palate.

1803. Section of a boy's head with a largely lobed Tumour, apparently of fibro-cellular structure, in the soft palate. XXIII. 29

The tumour was of slow growth. The patient was suddenly suffocated.
A drawing is preserved, No. 189.

FOREIGN BODIES IN THE FAUCES.

1804. A set of Artificial Teeth, of which this is a model, slipped into the fauces of a man during syncope, or a slight epileptic fit, and remained fixed between the root of the tongue and the epiglottis for fourteen weeks, occasioning great difficulty of deglutition and other distressing symptoms. It was at length extracted. XXIII. 33

The case is described by Sir J. Paget in the *Medical Times and Gazette*, January 16th, 1862.

DISEASES OF THE TONSILS.

ULCERATION.

1805. A Tongue, with the soft palate and its arches, exhibiting an enlargement of the right tonsil, with deep and ragged ulceration of its substance, XXIII. 1

Vide No. 1801.

ENLARGEMENT, AND NEW GROWTHS.

1806. Portion of an enlarged Tonsil, which was removed by operation. XXIII. 4

1807. A Tumour which commenced in the right tonsil and grew out into the fauces. It was removed from a man, aged 40, and had existed eighteen months. More than a year previously a considerable portion of the enlarged right tonsil had been excised. In its general characters and structure it resembles the tissue of the tonsils. XXIII. 31

SERIES XIII.

DISEASES OF THE TEETH.

EFFECTS OF ATTRITION.

1808. Two Teeth showing a considerable loss of structure owing to long-continued attrition. XXIIIa. 9

GEMMATION OF TEETH.

1809. A Molar Tooth, from one of the fangs of which a wisdom tooth projects at right angles, and protruded from the side of the maxillary bone. XXXIIIa. 2

See also a drawing, No. 190.
For specimens of Dentigerous Cysts, see Diseases of Bones, Series I, Nos. 539, 540.

DEFERRED SHEDDING OF MILK-TEETH.

1810. Milk-teeth removed from a boy, in whom they had remained three or more years after the ordinary time of separation. Their crowns appear sound, but their fangs are in various degrees irregularly absorbed, the edges of the remaining parts being abrupt and sharp, like those of pieces of necrosed bone. XXIIIa. 1

ABSORPTION OF FANGS.

1811. Four permanent upper Incisor Teeth, the fangs of which have undergone absorption. They became loose two years before actual separation from the gum took place.

From a woman aged 28 years.

Presented by I. J. Lyons, Esq.

MALFORMATION OF THE TEETH.

1811a. Cast of an Upper Jaw, showing the condition of the incisor teeth produced by congenital syphilis. The incisors are peg-shaped and notched.

Presented by A. Coleman, Esq.

1811b. Cast of an Upper Jaw, showing the condition of the front teeth, known as honey-comb teeth.

This condition is hereditary, and only affects the permanent set. The cause is unknown.

Presented by A. Coleman, Esq.

MALFORMATION OF THE JAW.

1811c. Cast of a Lower Jaw, showing the condition known as V-shaped deformity. The jaw is compressed laterally, especially towards the chin.

Presented by I. J. Lyons, Esq.

ALVEOLAR ABSCESS.

1812. A Bicuspid Tooth from the upper jaw. To the extremity of its fang is attached the cyst of an alveolar abscess. XXIIIa. 5

1813. A Bicuspid Tooth, the crown of which has been destroyed by caries. Attached to one of the fangs near the apex is a small cyst containing inflammatory products.

1814. A Molar Tooth, the crown of which is nearly destroyed by decay, while to the extremity of its fangs is attached the cyst of an abscess, more than half an inch in diameter. APPENDIX. 2

It was extracted from a boy, 14 years old, in whom it had caused extreme pain for seven days.

CARIES.

1815. Two Teeth exhibiting extensive caries of their crowns. The upper is surrounded by a deposit of tartar. XXXIIIa. 6

1816. Two Molar Teeth from the opposite sides of the same inferior maxilla symmetrically and synchronously diseased. XXIIIa. 8

1817. A Bicuspid Tooth. A horizontal section has been made through its crown just below an extensive carious excavation to show the limitation of that change to the actual surface. XXIIIa. 7a

Vide Nos. 1813, 1814, 1818.

NECROSIS.

1817a. A Necrosed Tooth, removed with a small ring of necrosed bone from the alveolus around one of its fangs.

POLYPUS OF PULP.

1818. A Molar Tooth. Its pulp cavity has been laid open by caries, and the pulp, increased in size, projects like a polypus from its interior. XXIIIa. 4

HYPERTROPHIED FANG.

1819. Section of a Tooth having a deposit around its fang of a considerable layer of osseous material. The pulp cavity is partially filled with secondary dentine. XXIIIa. 7

ODONTOMES.

ODONTOME CORONAIRE (BROCA).

1820. Section of a Molar Tooth. A small, nodulated, hard, ivory-like, bony Tumour springs from the base of the crown and from one of the fangs. It consists of a mixture of dentine, cementum, and some enamel. I. 85

EXOSTOSIS.

1821. A nodular Exostosis growing from the apex of the fang of a canine tooth, which was extracted on account of severe neuralgia.

Presented by I. J. Lyons, Esq.

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FRACTURE OF ALVEOLUS.

1822. Portion of the alveolus of the superior maxilla, containing the stumps of the two last molar teeth, which was wrenched off by a barber in an attempt to remove a tooth. XXIIIa. 17

MISCELLANEOUS.

1823. A Tooth from the jaw of a crocodile, in the cavity of which is seen the apex of a second tooth. XXIIIa. 3

SERIES XIV.

DISEASES OF THE SALIVARY GLANDS.

TUMOURS OF THE SUBMAXILLARY GLAND.

1824. A Cartilaginous Tumour of the submaxillary gland, removed from a girl, 15 years of age, in whom it had been growing four years. The tumour consists chiefly of hyaline cartilage, in which were found traces of acinous gland structure.—See *President Ward Book*, vol. v, p. 39; and *Pathological Soc. Trans.*, vol. xxviii, p. 228.

1825. A Tumour removed from the submaxillary region in front of the submaxillary gland, on the right side of a man aged 26 years. It had been growing about five years, and consists of fibrous tissue, through which are scattered masses of cartilage and bone.

1826. A Tumour removed from the right submaxillary gland of a man aged 24 years, in whom it had existed for nearly five years. It is composed chiefly of gland tissue with delicate portions of cartilage interspersed here and there throughout its substance.

TUMOURS OF THE PAROTID GLAND.

1827. Section of a Tumour removed from over the parotid gland of an apparently healthy woman about 30 years old. It is nearly pyriform, measuring about three and a half inches in length, and three inches in its greatest breadth. Its upper half is composed of white, semi-transparent, and compact cartilage; its lower half of a pale, obscurely fibrous, soft substance; a few small portions of cartilage are seen imbedded in the softer substance.

The tumour had grown very slowly and without pain. It was loosely connected with the surrounding parts.

1828. Half of a large Tumour, removed from over a parotid gland. The tumour formed a somewhat kidney-shaped mass, with its concavity resting on the parotid gland and adjacent structures. It measured about six inches by five. It is composed of large lobes, the partitions between which are in many places ossified. Its cut surface has a generally ochre-yellow, or fawn-colour, varied with paler tints, and with small nodules of cartilage and small grains of bone imbedded in it. Its substance is very firm, hardly compressible, but easily rending or breaking. A few small cysts lie scattered in it, and a large cyst, filled with fluid, was connected with a part of the tumour not shown here.

XXXV. 83

The patient was a woman 65 years old. The tumour had been slowly increasing for thirty-three years; and within the last year the skin over it had ulcerated, allowing a portion of it to protrude. It reached from just below the ear to the lower part of the neck, overhanging the

clavicle; it extended forwards nearly to the median line, and backwards nearly to the margin of the trapezius. The patient's general health was not materially affected by it, and she recovered after its removal, but a portion left in the operation subsequently increased rapidly, and then ulcerated, and by discharge and pain, destroyed life in about twelve months.

1829. Section of a Tumour, of the same kind as that last described, and also removed from over a parotid gland. It is oval, deeply knobbed, measuring about an inch and three-quarters by an inch. In general aspect its cut surface resembles that of the preceding tumour. It is more distinctly shown to be invested with a thin layer of fibro-cellular tissue. XXXV. 84

The patient was a woman 48 years old. The tumour had been increasing, without pain, for three years. In microscopic structure it consisted of a tissue like that of glands, and of cartilage, with groups of well-formed cartilage cells, and of free stellate and spicate nuclei. Some of its constituents are represented in Sir J. Paget's *Lectures on Tumours*, fig. 25, p. 177, and fig. 30, p. 203.

1830. Section of a Tumour of the same kind, removed from a similar situation. In this, however, the cartilaginous predominates over the glandular constituent of the morbid structure. XXXV. 85

The patient was a woman 25 years old. The tumour had been observed twelve months. Its increase was regular and painless. About six weeks after this operation, another tumour of the same kind appeared, which was removed after eleven months' growth. No subsequent growth occurred for at least three years.

The microscopic characters of this tumour were essentially similar to those of the last described.

1831. The half of a Tumour, probably of the same kind as the three last described, and, like them, removed from over the parotid gland. It differed from them, however, in that its texture was, in the recent state, soft and flickering, and, on its cut surface, brightly shining and translucent. It was like soft and nearly diffluent cartilage, arranged in minute clustered lobes, and presenting various shades of grey, pale yellow, and light blue and pink. It was very easily broken or crushed, but yielded no creamy or other fluid. It was of oval form, and loosely connected with all the adjacent parts. XXXV. 86

The patient was a woman 26 years old. The tumour, commencing without any known cause, had been seven years in progress, and in the last year had grown very quickly. It felt, during life, like a cluster of enlarged, soft, lymphatic glands, elastic, compressible, easily movable. The patient recovered after its removal, and remained well for at least eighteen months. The chief microscopic structures of the tumour were like clusters, or acini of gland-cells, with intersecting fibro-cellular tissue and fine flat filaments. Its appearance in the recent state is shown in a drawing, No. 547.

Presented by Mr. Barber.

1832. A Tumour which was removed from the right parotid region. The surface is largely nodulated and surrounded by a definite capsule. The tumour is composed of a yellowish-white, moderately soft material, having somewhat the appearance of cartilage. Near the centre is a small cyst, probably formed by mucoid degeneration. There is also a tendency to the development of small cysts in the softer parts of the growth.

Microscopic Examination.—The tumour presented a mixed character. In some parts traces of newly-formed gland tissue are seen. The bulk of the tumour is made up of ill-developed connective and mucoid tissue, in which fasciculi of spindle-cell tissue and groups of round cells are scattered.

From a man aged 56. The tumour commenced fifteen years before admission to the Hospital, as a small lump; it grew slowly at first, but latterly increased in size much more rapidly. It was circumscribed, and not adherent to the skin or subjacent parts.

Microscopic sections are preserved, No. 82.

N.B.—For Salivary Calculi, see Series LIII.

SERIES XV.

DISEASES AND INJURIES OF THE PHARYNX AND ŒSOPHAGUS.

DILATATION OF THE ŒSOPHAGUS.

1833. An Œsophagus with a portion of the Stomach. A dilatation of the œsophagus commences immediately below the larynx, and gradually increases to its termination in the stomach. In its lower half it measured nearly six inches in circumference. In the upper part of the dilated œsophagus the lining membrane is sound; in its lower half, the greater part of this membrane is superficially ulcerated, and shreds of it hang in the interior of the tube. Just above the stomach, the complete removal of the lining membrane exposes the muscular fibres of the œsophagus, which are here, and on every part of the canal, hypertrophied. The cardiac orifice was free; and the stomach was healthy. XXIV. 12

The patient was 20 years old. He had had signs of this disease for about eighteen months before his death, with frequent sickness about two hours after taking food, pain and tenderness in the epigastric region, and a feeling as if his food stopped at the lower part of the œsophagus. He died with peritonitis.

1834. Annular contraction of the Œsophagus at its cardiac extremity as it passes through the diaphragm. Above this point the canal is greatly dilated, and the muscular portion of its wall is hypertrophied. The disease had existed for several years. 95

From the collection of J. R. Farre, Esq., M.D.

EFFECTS OF INFLAMMATION, &c.

EFFUSION OF LYMPH.

1835. An Œsophagus, in which the whole of the mucous membrane is lined by a uniform thin layer of lymph. Strips of the lymph, which is soft as if recently effused, are reflected. In the portion of the pharynx which is preserved, lymph of the same kind is deposited in separate patches. XXIV. 6

The patient was a man 35 years old. He died on the seventh day of his illness of acute pleuro-pneumonia. No signs of this affection of the pharynx and œsophagus had been observed during life; and it is not probable that he had taken any large quantity of antimony.

1836. An Œsophagus, with a portion of the Stomach. The inner surface of the œsophagus is covered by lymph, deposited in strips corresponding with the wrinkles of its lining membrane. Portions of the lymph have been detached; and the subjacent membrane appears unaltered. XXIV. 11

There was no reason to suppose that this deposit of lymph was occasioned by poison.

DIPHTHERIA.

1837. Membranous Films removed from the mucous surface of the pharynx. Similar ones extended into the larynx. One of these is preserved, and shows that the disease involved the bronchial tubes. The films are opaque, firm, and tough. They do not present any recognizable structure, but consist of granular matter, exudation corpuscles, with traces of imperfect filaments. XXIV. 23

From a case of diphtheria.

ULCERATION.

1838. Part of a Pharynx and Œsophagus, with the Larynx. The mucous membrane of a part of the pharynx and œsophagus is destroyed by ulceration. The surface of the ulcer is uneven and ragged, and in one point marked by a bristle; the ulceration extends through the adjacent lateral wall of the trachea. XXIV. 7

SYPHILITIC ULCERATION.

1839. The Base of a Tongue, with the Pharynx and other adjacent parts. A large portion of the mucous and submucous tissues of the pharynx, and of one margin of the epiglottis, is destroyed by sloughing and ulceration. The mucous membrane covering the upper part of the larynx is œdematous and, in some parts, superficially ulcerated. XXIV. 8

From a girl who was greatly debilitated by the effects of syphilis and mercury.

SIMPLE STRICTURE OF THE ŒSOPHAGUS.

1840. A Pharynx and Œsophagus, with the Larynx and other adjacent parts. Just below the lower border of the cricoid cartilage, the canal of the œsophagus is reduced to a quarter of an inch in diameter, and appears flattened from before backwards. The tissues for some distance around this part are thickened, indurated, and consolidated. The mucous membrane of the anterior wall of the pharynx above the stricture is ulcerated, and appears œdematous, as if an abscess had been discharged through it. Below the stricture the œsophagus is healthy. XXIV. 1

1841. Portion of an Œsophagus, showing a marked narrowing of the canal. The mucous membrane is firm, dense, and some cicatrices are seen on the surface, but there is no evidence of a new growth.

From a woman, who died of pneumonia. She had long suffered from dysphagia, supposed to be due to a malignant growth in the œsophagus.

Vide also No. 1834.

MORBID GROWTHS, &c.

CANCER.

1842. Epithelioma of the Pharynx. A large cancerous tumour springs from the right side of the pharynx, at the level of the upper part of the larynx. In the natural state of the parts, the tumour almost completely occluded the canal of the œsophagus. During the last month of life deglutition was less difficult than before, and small pieces of meat were sometimes swallowed.

The patient was 41 years of age. He died after a long illness with abscesses in the lungs and right arm.

1843. A Pharynx, with the soft Palate, and part of the base of the skull. The upper part of the pharynx is completely filled by a nearly globular growth of soft medullary substance, with a warty surface. The growth appears to have had its origin in the walls of the pharynx, from which it projects, not only into the pharyngeal cavity, but also forwards into the mouth under the soft palate, and backwards towards the spine. XXIV. 5

The patient was not aware of the existence of the tumour till within a few weeks of his

admission into the Hospital, at which time it was nearly as large as it now appears. It often bled: and destroyed life by the hæmorrhage, and by the impediment which it caused to both deglutition and respiration. A part of the same tumour projected through the basilar portion of the occipital bone, and extended along the outside of the œsophagus, where it was connected with enlarged lymphatic glands full of soft medullary matter.

1844. A Pharynx and Larynx, with the base of the tongue and other adjacent parts. A large ulcer, destroying a great part of the lower portion of the pharynx, has extended into the trachea directly below the cricoid cartilage. The right half of the cricoid cartilage is denuded, and separated from its connections with the upper ring of the trachea; on this side also a portion of the thyroid cartilage is exposed. The margins of the ulcer are sharp and abrupt; its base is irregular, and was covered with a soft creamy matter, containing, probably, the *débris* of epithelioma. XXIV. 18

The patient, a woman, 36 years old, was in good health until fifteen months before death. She then began to have pain and difficulty in deglutition. These symptoms increased for nine months; and then her voice became hoarse, and she had frequent cough without expectoration, especially on any attempt at deglutition. In a few weeks she had considerable hæmoptysis; and this recurred daily, and as often as, in examination of the throat, the thyroid cartilage was pressed.

The case is related by Dr. Jeaffreson in the *Transactions of the Pathological Society*, vol. ii, p. 51.

1845. The Œsophagus of a man, aged 38, on whom gastrostomy was performed one week before death (see specimen, Series XVII, No. 1950). In its course is a broad ring of epithelial cancer, smooth on the outside, but superficially ulcerated on the mucous surface. The stricture produced by it was nearly complete; water would pass through only drop by drop. Above the stricture, the œsophagus was only slightly dilated, and elsewhere was quite healthy. The pneumogastric nerves were involved in the cancerous mass. On the upper curve of the stomach, at the pyloric end, was a small nodule of epithelial cancer; no cancerous deposits were found elsewhere.

The case is related in the *Transactions of the Clinical Society*, vol. v, 1872.

There is a drawing of the specimen, No. 195.

1846. An Œsophagus, surrounded for about three inches of its length by a firm mass of cancer, which commences four inches below the cricoid cartilage. The bifurcation of the trachea, and the bronchi are adherent to, and partially imbedded in, the anterior surface of the growth: the descending aorta is adherent to its left side; its posterior surface was adherent to the vertebræ. The section of the tumour presents a dense fibrous aspect. An ulcerated canal large enough to admit a No. 10 bougie passes through the growth; nearly all trace of the normal structure of the œsophagus is here lost. Below the tumour the mucous membrane of the œsophagus is infiltrated in streaks, which extend as far as the cardiac orifice; there are also small patches and sub-mucous nodules of the growth. The bronchial glands were infiltrated, as were also some of the mediastinal; two of these lying to the right of the trachea are preserved. The larger compressed the bracheo-cephalic vein, which was filled by a recent clot.

Gastrostomy was performed. The stomach is preserved in Series XVII, No. 1951.

1847. The lower half of an Œsophagus, with the cardiac portion of the Stomach. Within and just above the cardiac orifice there is an annular, flat, spongy growth, probably of medullary substance, ulcerated in its centre; by which growth, as well as by the thickening and contraction of the surrounding tissues, the termination of the canal of the œsophagus is reduced to a very small calibre. Above the stricture the œsophagus is dilated, its muscular coat is hypertrophied, and its mucous membrane appears œdematous, and is at one part superficially ulcerated. The walls of the stomach are healthy. XXIV. 2

1848. An Œsophagus from a man, aged 56, showing an epithelial cancer in a

state of ulceration, involving the whole circumference of the tube in its lower third. At one part the coats are entirely perforated, and the tube of the œsophagus communicated with an ulcerated cavity which lay in the tissue of the posterior mediastinum in contact with the right lung. No disease was found elsewhere. XXIV. 24

The case is described by Dr. Baly in the *Transactions of the Pathological Society of London*, vol. x, p. 165.

1849. The lower end of the Œsophagus and cardiac orifice of a Stomach, affected with cancer. The cardiac orifice is narrowed from the protrusion of the gastric wall by the new growth, and only admits the little finger.

Secondary deposits of cancer were found in the liver, and the lumbar, bronchial, and cervical glands were infiltrated.

From a man aged 40 years.—See *Post Mortem Book*, vol. vii, p. 116.

1850. An Œsophagus and Stomach. The lower third of the œsophagus and a large portion of the stomach near its cardiac orifice are ulcerated through the whole thickness of their walls. The margins of the ulcers are sinuous, very abrupt and ragged, and present the general aspect of cancerous disease. XXIV. 4

1851. Portion of an Œsophagus and Stomach, showing a large cancerous ulcer extending for some distance above and below the cardiac orifice.

From a man, aged 54 years, in whom symptoms of the disease had existed for nine months before death.—See *Pitcairn Ward Book*, vol. ii, p. 334.

1852. A Larynx, with part of the Trachea, Pharynx, and Œsophagus, from a man aged 49 years. The specimen shows a large ulcer, two inches across, nearly surrounding the gullet, possessing very thick cancerous margins, and opening into the trachea by an aperture the size of a sixpenny piece. It was on a level with the top of the manubrium sterni. XXV. 43

See *Post Mortem Book*, Case 246, July 27, 1871.

1853. Part of an Œsophagus, with the Trachea and Bronchi. Opposite the bifurcation of the trachea, the walls of the œsophagus are nearly surrounded by a firm cancerous growth. The surface of this growth, where it projects into the œsophagus, is ulcerated; and ulceration, penetrating at one part through its whole thickness, has extended into the right bronchus, in the course indicated by the piece of quill. XXIV. 3

1854. The Œsophagus and Cardiac Orifice of a Stomach, showing extensive cancerous ulceration, and infiltration, and consequent narrowing of the œsophagus. An ulcerated perforation of the wall of the œsophagus at its lower end is seen, which led into a gangrenous patch in the base of the right lung. The cardiac end of the stomach is thickened and corrugated.

Secondary deposits of medullary cancer were found in the liver, but the lymphatic glands of the abdomen and thorax were not enlarged.

From a man aged 68 years.—See *Post Mortem Book*, vol. vii, p. 107.

OTHER MORBID GROWTHS IN, AND AROUND THE ŒSOPHAGUS.

1855. Part of an Œsophagus, in which nearly the whole of the submucous tissue is occupied by a substance resembling that of colloid cancer. In many places the mucous membrane is upraised, with a low tuberculated surface, by the colourless and nearly pellucid clustered cystic growths beneath it; and, at one part, a globular mass of the same structure, about two-thirds of an inch in diameter, is suspended from the sub-mucous tissue into the cavity of the œsophagus. XXIV. 19

Presented by Sir John Forbes.

1856. Portion of the Œsophagus of an elderly woman. The whole of the tissues on a part of its anterior surface are penetrated by an ulcer of an oval form with irregular edges. The base of the ulcer is formed by a mass of bronchial glands. XXIV. 15

Presented by Dr. Black.

1857. The Œsophagus of a Bullock. Numerous fringe-like processes, arranged in clusters, project from the mucous membrane into the interior of the canal. XXIV. 21

1858. A Tumour, (probable lymphadenoma), which completely surrounds the œsophagus, so compressing the tube as it lies behind the division of the trachea that its canal barely admits the quill which is thrust along it. 94

From the collection of J. R. Farre, Esq., M.D.

PERFORATION OF THE ŒSOPHAGUS BY ABSCESS, ANEURISM, &c.

1859. An Œsophagus, Trachea, and adjacent parts, exhibiting the remains of an abscess, which had formed in the deep cellular tissue of the neck, and had burst in two directions, namely, through the upper part of the œsophagus, and through the right pleura into the cavity of the chest. A bougie indicates the course of the abscess on the inner side, and across the front of the sheath of the carotid artery and jugular vein. XXIV. 14

The patient was a strong man 31 years old. He was admitted into the Hospital with pneumo-thorax on the right side and general emphysema. After his death it was stated that he had had pain in his throat and difficulty of swallowing for some time before those symptoms ensued which indicated the penetration of the pleural cavity.

1860. Part of an Œsophagus and of a Trachea. Below the division of the latter the pressure of an aneurism has caused ulceration of the outer walls of the œsophagus, so that the mucous coat is exposed, and alone prevented perforation of the canal. 97

From the collection of J. R. Farre, Esq., M.D.

POST-MORTEM DIGESTION OF THE ŒSOPHAGUS.

1861. An Œsophagus, with a small portion of the Stomach. About half the circumference of the walls of the œsophagus, at its lower end, is thin, soft, and pulpy, and in the centre of this part there is a large aperture with ragged flocculent margins, partially blackened. The adjacent parts of the œsophagus and stomach are healthy. XXIV. 10

It is probable these changes were produced after death by the action of the gastric fluid.

1862. An Œsophagus, with a portion of the Stomach. There is almost entire destruction of the coats of the œsophagus, for three inches above the stomach, and in nearly the whole circumference of the tube. The portion of the œsophagus which remains in this situation is pale, soft, and pulpy. The stomach appeared healthy. XXIV. 13

From a child who died in consequence of an accidental injury. No sign of affection of the stomach had existed before death, and the characters of the changes indicate that they were the result of the action of the gastric fluid after death.

Vide No. 1864.

INJURIES OF, AND OPERATIONS UPON THE ŒSOPHAGUS.

RUPTURE AND PERFORATION.

1863. An Œsophagus and Stomach, exhibiting an extensive laceration of the muscular fibres of the former, which occurred in the act of vomiting. Both

layers of the muscular fibres of the œsophagus are torn through at their connection with those of the stomach; and, by their retraction towards the upper part of the œsophagus, its submucous tissue is exposed over the whole extent of its last four inches. A similar retraction of the muscular fibres on the fundus of the stomach has taken place, exposing a large portion of its submucous tissue. There is a small laceration of the mucous and submucous tissues of the œsophagus about two inches from the cardiac orifice. XXIV. 9

The patient was a man 65 years old. For about a year before his death he had dyspepsia, and was believed to have stricture in the lower part of the œsophagus, for which probangs were passed. He was subject to vomiting, and could not swallow anything solid. He felt the rupture of the œsophagus during a slight act of vomiting, thirty-six hours before death. Great visceral disease is stated to have been found after death; but there is no appearance of stricture or of any change of structure having existed in the œsophagus previous to the rupture.

Presented by Beriah Brook, Esq.

1864. The Œsophagus and Left Lung. About one inch below the level of the cricoid cartilage a small glass rod is passed through an aperture on the anterior surface of the œsophagus, leading into a channel formed by the separation of the longitudinal from the transverse layer of muscular fibres. The channel communicated below by two openings immediately above the diaphragm with the left pleural cavity, and by another with the lower part of the canal of the œsophagus: into these apertures portions of glass rod are inserted. Immediately below the upper aperture described, three flat condyloma-like growths project from the mucous membrane of the gullet; otherwise there was no obstruction of its canal. At the lower part of the œsophagus there are two large openings, one above the other, apparently produced by post mortem digestion. The left pleura is covered with lymph and there was some pleurisy at the base of the left lung.

From a child aged 2 years. Catheters were passed down his œsophagus on account of difficulty in deglutition, occurring nine weeks after he had swallowed some oil of vitriol. A slight contraction of the œsophagus was felt. A few hours after the passage of some gum elastic catheters down the gullet under chloroform, the mother brought the child back to the Hospital, stating that it had been very ill since recovering from the chloroform. The child was admitted and died on the second day from pleurisy.—See *Lucas Ward Book*, vol. vii, p. 33.

1865. Ulceration of the Œsophagus with constriction of the canal. A bougie passed down to the stricture perforated the œsophagus, and passed by the side of it as low down as the diaphragm. 96

From the collection of J. R. Farre, Esq., M.D.

IMPACTION OF FOREIGN BODIES IN THE ŒSOPHAGUS.

1866. Part of an Œsophagus and Pharynx with the surrounding structures. At the commencement of the former, just below the level of the cricoid cartilage, a fragment of bone, fixed across the axis of the canal, has its pointed extremities imbedded in the ulcerated and sloughing mucous membrane. On either side of the pharynx are cavities which contained pus, surrounded by sloughing tissue. One of these, on the right side, extends between the œsophagus and the trachea. These abscesses communicate freely with the ulcers which surround the impacted extremities of the foreign body. XXIV. 22

Removed from the body of a man who had swallowed the fragment of bone nine days before death. The probang, when introduced, slipped past it over its posterior border, so that, during life, no certain indication of its presence was obtained.

1867. A Heart, Pericardium, and Œsophagus. The broken end of a large fish-bone projects from the œsophagus about a quarter of an inch above the cardiac orifice of the stomach: the sharp pointed extremity is seen protruding through the upper and posterior portion of the pericardium. The bone was in a position

directed obliquely upwards and forwards, and it transfixed the diaphragm. On the upper and back part of the wall of the left ventricle, half an inch to the left of the posterior interventricular septum, and corresponding in position to the point where the fish-bone projects from the pericardium, there is a lacerated wound of the heart, consisting of two punctures placed side by side, which extend about a quarter of an inch into the ventricular wall, but do not penetrate it. The parietal and visceral layers of pericardium in the neighbourhood of the wound are discoloured and covered with lymph. The heart is dilated and flabby.

The parts were taken from a man, aged 59 years, who came to the Hospital stating that he felt a fish-bone sticking in his throat. He complained of pain over the centre of the sternum. On the previous evening he had eaten some fish while partially intoxicated.

A dilating horse-hair probang was passed by the house-surgeon. On leaving the Hospital he was very faint and complained of pain in the region of the heart. He took to his bed and on the following day appeared rather better, but vomited all his food. On the evening of the third day he suddenly expired. The pericardium was found distended with blood-stained serum and contained some blood-clot.

See an account of the case in the *Clinical Soc. Trans.*, vol. xiii, 1880, by Mr. Eve.

1868. A vulcanite Tooth-Plate, which was swallowed by a man. It lodged and remained firmly fixed in the œsophagus a little below the cricoid cartilage. Extraction was effected by means of the grapnel probang, but with great difficulty and only on exercising considerable force.

1869. A gold Palate-Plate with four incisor teeth and having two sharp hooks on either side. The plate was swallowed by a young lady aged 21, while taking a pill. It lodged in the œsophagus, from whence efforts were made to remove it, without success. Operative interference was refused. She suffered from difficulty and choking during deglutition, and became extremely emaciated. Two years and eight days after swallowing the plate she vomited after inhaling some chloroform for the relief of pain, and without effort brought the plate up.—For account of case see *Lancet*, July 19th, 1879.

Presented by Dr. Nicholl Evans.

EFFECTS OF CORROSIVE POISON.

1870. An Œsophagus; its mucous membrane is shrivelled, of a bright yellow colour, and thrown into longitudinal folds. The yellow discoloration stops abruptly with an irregular jagged border at the commencement of the stomach, the epithelial and mucous coats of which are wanting, its surface being rough, and of a brownish-red colour. XXIV. 20

From the body of a man who died fifteen hours after drinking one ounce of strong nitric acid. A drawing of the stomach and œsophagus is preserved in the Museum, No. 211; and the case is fully described in the *St. Bartholomew's Hospital Reports*, vol. v, p. 247.

ŒSOPHAGOTOMY.

1871. The upper part of the Œsophagus, with the Larynx and part of the Trachea, from a woman, aged 48 years, upon whom œsophagotomy was performed for a cancerous stricture, which extends from the junction of the œsophagus with the pharynx upwards for about an inch. Below the stricture the tube is quite healthy. The operation wound, which may be seen to be directly below the stricture, is set open with a bristle.

The patient had suffered for seven months before her admission into the Hospital with dysphagia, and had become greatly emaciated. Nothing larger than a No. 8 bougie (urethral, could be passed through the obstruction, the commencement of which could be felt by the finger passed through the mouth into the pharynx. After the operation a full-sized tracheotomy-tube was introduced through the wound. Through it the patient took food well, and in all ways made very favourable progress for a week, when she refused food and medicine, and, getting weaker, died exhausted on the sixteenth day after the operation.—See *Lawrence Ward Book*, 1867, p. 7.

SERIES XVI.

DISEASES OF THE PERITONEUM, OMENTUM, AND MESENTERY.

PERITONITIS AND ITS RESULTS.

1872. Portion of small Intestine, with its Mesentery and a part of the Peritoneum from the adjacent wall of the abdomen. The peritoneum is in every part thickened and indurated, and its free surface is covered by a large quantity of false-membrane. Each of the portions here shown is nearly an eighth of an inch in thickness, and is formed of tough, coarsely laminated tissue. XVI. 3

1873. Portion of thickened Peritoneum, from the abdominal walls of the patient from whom the preceding specimen was taken. It is similarly thickened, and its internal surface is lined by lymph recently effused. XVI. 4

1874. Portion of small Intestine, exhibiting the results of chronic peritonitis. Two of its convolutions are closely united, and are enveloped by shreddy membrane formed of recently organized lymph. In the substance of the false-membrane, as well as in the peritoneum, there are numerous miliary tubercles. XVI. 9

1875. Portion of a Liver, with long, slender, cord-like adhesions between its peritoneal covering and that of the diaphragm. XVIII. 7

TUBERCLE.

1876. Portion of small Intestine injected. Its canal has been laid open. Along the cut margin its walls are considerably thickened, and the layers of which they are composed can be easily recognized. Their thickness is chiefly due to the deposit of masses of tubercle in the sub-serous coat, to which the diseased condition appears to be limited. XVI. 121

1877. Portion of small Intestine injected. There is a deposit of miliary tubercles in the sub-serous tissue. They are most abundant at the reflection of the mesentery, and by their white colour contrast with the surrounding vascularity, which, however, is not greater in their vicinity than in other parts of the canal. XVI. 122

1878. Portion of a Jejunum, injected and dried. Its opposite peritoneal surfaces are adherent, and miliary tubercles are formed between its coats and in the substance of the false-membrane. XVI. 61

1879. Portion of small Intestine, with numerous minute, round, and oval masses of tubercle in the tissue of its peritoneal coat and in the adjacent part of the mesentery. The portions of the peritoneum between the tubercles appear healthy. XVI. 1

1880. Portion of small Intestine, with thick-set clusters of miliary tubercles in its peritoneal coat. The peritoneum is generally thickened, and many of the convolutions of the intestine are adherent. XVI. 6

1881. Portion of small Intestine, in which, over an ulcer of the mucous membrane, tubercular matter is deposited in small masses in the tissue beneath the peritoneum. The lympatics proceeding from this part, and ramifying between the coats of the intestine, are also filled with tubercular matter. XVI. 66

From a man between 20 and 30 years old. He had disease of the hip-joint of twelve years' standing, and extensive tubercular disease of the small intestines and several other organs.

1882. Portion of a Stomach, with several small oval masses of tubercular matter deposited beneath its peritoneal coat. A section has been made through one of them. XV. 21

From a lad who died with tubercles in his lungs and in many other organs.

1883. Portions of small Intestine, firmly united by thick layers of organized lymph, in which, as well as in the coats of the intestines, there is abundant formation of tubercular matter. XVI. 58

Presented by S. G. Lawrance, Esq.

MORBID GROWTHS, &c.

FATTY TUMOURS.

1884. A Tumour growing from the Mesentery close to the Ileo-cæcal valve. Half of the tumour has been removed. Microscopical examination showed it to be a fatty tumour, with a great excess of connective tissue. XVI. 144

The patient was a boy 14 years old. He had suffered from attacks of severe eolic for two years before death; the attaeks became more and more severe, and of longer duration, the last attaek before the fatal one lasting five weeks. The fatal attack began twenty-two days before death, and had all the eharacters of ileus, with visible movements of the intestines, fæcal vomiting, and constipation. At the post mortem examination the tumour was found compressing the lowest part of the small intestine. The kidneys were in their natural position, and, excepting the ileus and its aecompaniments, the body was perfectly healthy.

Presented by Dr. Burd, of Shrewsbury.

FIBROUS.

1885. Portion of large Intestine. A small, oval, fibrous tumour, attached to its surface by a narrow pedicle, was thus suspended in the sac of the peritoneum. XVI. 101

CANCER.

1886. A portion of Omentum, the surface of which is very irregular from the projection of numerous nodules and granulations; and its substance is thickened by infiltration with a soft white New-Growth.

Microscopic Examination.—It consisted of round nucleated eells, not resembling epithelium, crowded together on the surface with no apparent intereellular substance, and infiltrating the substanee of the omentum.

From a woman, aged 55 years, who was admitted to the Hospital with jaundice of six weeks' duration, and occasional vomiting; she had suffered for eight or nine months from pain in the right side of the abdomen. A hard, irregular, tender mass was felt in the right hypochondrium, separated by a patch of resonance from the liver. This was found, on post mortem examination, to be the enlarged omentum. The parietal layer of peritoneum everywhere was eovered with nodules and granulations of new-growth similar to that in the omentum, and the disease extended through the diaphragm.

The liver contained large and small masses of white soft new-growth, and the lumbar and mesenterie glands were infiltrated, but no other organs were affected. The ribs and ilium were markedly softened throughout; and by microscopic examination the eaneellous texture of the ribs was found to have almost entirely disappeared.

The histological characters of the growth and general facts of the case indicate that the disease originated in the peritoneum probably from the endothelium of the omentum.

Microscopic sections are preserved, No. 83.

1886a. A portion of small Intestine, with the mesentery. Numerous soft, very vascular, and flocculent, medullary tumours, of various sizes, arise from the peritoneal surface of the intestine and mesentery. The injection of the tumours shows that they are very vascular. XVI. 60

1887. A Portion of small Intestine, in which there are groups of minute, white, and firm nodules beneath the peritoneal coat. XVI. 53

Presented by S. G. Lawrance, Esq.

1888. Portion of the Arch of a Colon, and the great Omentum, from the same patient as the preceding specimen. The natural structure of the omentum is entirely removed, and in its place there is a firm white substance nearly an inch in thickness. Distinct nodules have also formed beneath the peritoneal covering of the intestine. XVI. 54

1889. Portion of small Intestine, the peritoneal coat of which is occupied by numerous close-set groups of firm, flat, white medullary tumours. They form an uneven nodulated layer, from one to two lines in thickness. The other coats of the intestine appear healthy. XVI. 85

1890. Portions of Stomach, Colon, and Great Omentum, from the same patient as the preceding specimen. The peritoneal coats of the stomach and colon are occupied by a similar layer of medullary substance; and in the place of the omentum is a narrow mass, an inch thick, of hard substance coarsely striated, like a congeries of small, firm, medullary tumours. XVI. 86

The patient was a woman 44 years old. She had abdominal pain for six months, and ascites for seven weeks before death. Paracentesis of the abdomen was performed four times; and on the first occasion the fluid drawn from the abdominal cavity coagulated spontaneously. The case is recorded by Dr. Ormerod, in the *Lancet*, May 2, 1846, p. 504.

1891. Mass of Omentum infiltrated with (?) colloid cancer. 136

From the collection of J. R. Farre, Esq., M.D.

1892. A somewhat similar specimen. 136A

From the collection of J. R. Farre, Esq., M.D.

ENTOZOA.

1893. An Omentum occupied by Hydatids. 137

From the collection of J. R. Farre, Esq., M.D.

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PARACENTESIS.

1894. Two Specimens, in which fatal hæmorrhage followed the operation of paracentesis. In the upper a coloured clot is seen to project into the peritoneal sac from the inner orifice of a puncture made by a trocar in the ordinary situation. The patient died twelve hours after. The peritoneal cavity was filled with blood. In the lower the anterior wall of the abdomen has been removed. On one side is seen the omentum, in which are many large veins; on the other the thick wall of an ovarian cyst. In puncturing the cyst which was one of many resulting from a colloid growth, the trocar passed through a vein belonging to the omentum, the latter being spread over the front of the cysts, between them and the abdominal wall. The sac of the peritoneum, and that of the punctured cyst, contained fluid and coagulated blood. The patient died a few hours after the operation. XVI. 128

SERIES XVII.

DISEASES AND INJURIES OF THE STOMACH.

POST MORTEM DIGESTION.

1895. The Stomach of a Child, presenting the appearances produced by digestion acting after death on the walls of the organ itself. There are four large irregular apertures through the coats at the great end and middle of the stomach. The edges of these apertures are soft and flocculent, and the remaining mucous membrane of the adjacent parts is soft, pale, and almost gelatinous in its appearance. xv. 8

The child was 10 years old, and died, after a short illness, with inflammation of the trachea.

1896. Portion of a Stomach, exhibiting attenuation, with paleness and softening, of a part of its great arch. The dark streaks in the altered portion of the stomach are produced by the blackening of the blood coagulated in its vessels. xv. 13

It is probable that these changes were occasioned by the action of the secretions of the stomach upon its coats after death.

1897. Parts of a Stomach and a Diaphragm, exhibiting the effects of the action of the gastric fluid after death. The greater part of the fundus, or cul-de-sac, of the stomach is destroyed, and a large aperture through the walls has been here made by the action of the digestive fluid. The borders of the aperture are formed by soft, flocculent, and shreddy tissue; and the mucous membrane adjacent to it is soft and pulpy, as if nearly dissolved. In the pyloric half of the stomach little change appears, but in the diaphragm there are large apertures by the side of the left lobe of its tendinous centre, whose soft shreddy margins indicate that they were produced by the digestive power of the fluid escaping from the stomach. xv. 31

The parts were taken from a fat woman, 60 years old, who died about twenty-four hours after a fit of apoplexy, which produced immediate and continued unconsciousness. In the afternoon, just previous to the fit, she had eaten more food than she had for some time previously been able to obtain; and she had vomited after the fit. The body was examined forty hours after death. The case is in the *St. Bartholomew's Hospital Reports*, vol. vii, p. 39.

1898. Digestion of part of the wall of a Stomach immediately below the œsophagus. The mucous membrane is soft and jelly-like, and the walls are extremely thin over a considerable extent. A circular opening allowed the gastric contents to reach the diaghragm, which was soft and eroded opposite the aperture. There were no adhesions of the peritoneal surfaces. 98

The patient died suddenly one hour and a half after dinner. Five days previously he fell and suffered from a slight concussion. The digestion of the stomach was the only post mortem condition noticed.

From the collection of J. R. Farre, Esq., M.D.

1899. Portion of a Stomach, in which there is an aperture with a dark discoloration of the membrane around it. The discolored portion is very thin, and the aperture in its centre has ragged edges. XV. 11

It is uncertain whether these changes are due to ulceration, or to the action of the secretions of the stomach after death.

POST-MORTEM DIGESTION, AND HÆMORRHAGIC EROSION.

1900. Part of a Stomach, in which one-half of the mucous membrane is made thin and pale by digestion after death, and the other half is the seat of numerous minute "follicular" ulcers. The ulcers, or "hæmorrhagic erosions," are from half a line to two lines in diameter, generally oval or circular, like little shallow pits in the mucous membrane. There is no apparent change of structure in the tissues round or beneath them; but the base of each ulcer was darkly blood-coloured, through the small quantity of blood extravasated into it. XV. 32

The patient, an intemperate man, 50 years old, died with general dropsy, cirrhosis of the liver, enlarged heart, and congested spleen and kidneys. He was out of health for five years previous to his death, and was subject to "bilious attacks," and to gout. His case is related in the *St. Bartholomew's Hospital Reports*, vol. x, p. 243.

HÆMORRHAGIC EROSION.

1901. The cardiac portion of a Stomach, with the lower part of the œsophagus. There are six superficial ulcers of irregular shape, and from two lines to half an inch in width, in the mucous membrane just below the cardiac orifice. Their margins are clearly defined, their bases smooth, and of a deep black colour from blood effused in and upon them, and discoloration by the action of the gastric fluid. All the adjacent textures of the stomach appear healthy. In the lower part of the œsophagus the epithelium has been removed; its blood-vessels are in many parts intensely congested, and the blood in them is deeply blackened. XV. 26

From an elderly man who died with granular disease of the kidneys, dropsy, and enlarged heart, without any probability of having taken poison, and without having exhibited any remarkable signs of disease of the stomach.

1902. Portion of a Stomach, exhibiting numerous small ulcers in the mucous membrane. The ulcers are from half a line to a line in diameter, round, oval, and angular in form; and some of them were, in the recent state, black, probably with effused blood. XV. 4

From a woman to whom small doses of arsenic had been administered for a fortnight, on account of a cutaneous affection. The mucous membrane of the stomach and intestines appeared highly vascular.

1903. Portion of a Stomach, in the mucous membrane of which there are numerous circular ulcers. They vary from half a line to two lines in diameter, and penetrate the whole thickness of the mucous membrane, which in the intervening spaces appears healthy. Many of them in the recent state contained points of effused blood. XV. 24

From a woman, 45 years old, from whom the sarcomatous tumours of the breast in Series XLVIII, Nos. 3163 and 3164, were taken.

PUNCTIFORM HÆMORRHAGE.

1904. A Stomach, laid open by an incision along the great curvature. There is capillary congestion of the mucous membrane. Numerous punctiform hæmorrhages are scattered over the stomach in the neighbourhood of the great curvature; they are most numerous on the anterior surface. The mucous membrane was covered by a layer of viscid mucus mixed with altered blood, and much resembled the condition seen in poisoning by oxalic acid.

From a girl aged 11 years. Symptoms of diabetes mellitus could be ascertained to have

existed no longer than two or three weeks before her admission to the Hospital. During the greater part of this period she had persistent vomiting and purging. She died of exhaustion on the third day after her admission. Two ecchymoses appeared on the right leg; these were the only external hæmorrhages. The kidneys were congested; all the other organs were normal.—See *Post Mortem Book*, vol. vii, p. 48.

RUPTURE OF VARICOSE VEINS IN THE STOMACH.

1905. A Stomach. In the fundus are two large varicose veins, filled with soft black recent thrombi. A small aperture is seen in the wall of one of them, closed by a clot, into which a double bristle has been inserted.

From a woman, aged 48 years, who died three hours after an attack of hæmatemesis; she had been subject to such attacks for twenty years. The liver of the same patient is contained in Series XXI, No. 2208.—See *Post Mortem Book*, vol. iii, Case 160.

ABNORMAL CONDITIONS OF THE MUCOUS MEMBRANE.

1906. A Stomach. The mucous membrane is everywhere mammillated, not by a puckering up of the membrane itself, but by a vast increase in the size of the glandular structures in it.

From a woman, aged 37 years, who during the last month of her life suffered from sickness, and towards the close the vomiting became constant, and accompanied by much retching. A drawing of the recent preparation is preserved, No. 207.—See *Pathological Society's Transactions*, vol. xx, p. 163. *Post Mortem Book*, vol. i, No. 192.

CONTRACTION AND THICKENING OF STOMACH.

1907. Thickening of walls of the Stomach, consequent upon chronic peritonitis. The stomach is reduced to the calibre of an ordinary large intestine; the walls are nearly half an inch thick. The mucous membrane is intact, but at one place there is a polypus the size of a horse-bean. The stomach was strongly adherent to all the parts around; the cardiac orifice would just admit a large probe and no more. One inch short of the pylorus all the thickening ceases, and the organ rather rapidly assumes a natural appearance.

The patient died from pulmonary phthisis. The intestines were ulcerated.

ULCERS OF STOMACH.

1908. Portion of a Stomach, exhibiting a general thickening of its coats, with ulceration. The ulcer is of an oval form; its edges are smooth and abrupt; its base is hollow, but smooth; the tissue around it is elevated and deeply wrinkled. xv. 6

1909. A Chronic Ulcer, occupying the posterior wall of the stomach close to the pyloric orifice. The edge of the ulcer is at one part cleanly cut and steep, at another bevelled, and the mucous membrane is slightly everted. The muscular coat of the stomach is exposed in the centre of the ulcer. The pyloric orifice was narrowed, apparently from the thickening of the mucous membrane, and the stomach was dilated.

From a man, aged 45 years, who for two or three years vomited, every two or three days a large quantity of brown fluid; he never vomited blood. Death took place from exhaustion.

Presented by J. Shuter, Esq.

1910. Portion of a Stomach, in which there is an Ulcer extending completely through its coats. The ulcer is situated near the lesser arch; its edges are smooth and abrupt, shelving towards the aperture in the peritoneal coat, which is much smaller than that in the mucous coat. The tissues immediately around the ulcer are thickened and indurated, but the rest of the stomach appears healthy. xv. 1

1911. The Pyloric portion of a Stomach, with the commencement of the Duodenum. About two inches from the pylorus, in the lesser arch of the stomach, is an ulcer which has penetrated through all the coats. In the peritoneal coat the aperture is oval, abrupt, and sharp-edged; that in the mucous membrane has similar characters, but is much larger; the sides of the ulcer shelve smoothly and gradually from the aperture in the mucous, to that in the peritoneal coat. Around this ulcer are several of smaller size and irregular in form, which have removed only the mucous membrane. Their margins are clean and abrupt, and their bases are smooth. The intervening tissue appears healthy. xv. 25

1912. Portion of the anterior wall of a Stomach, in which there is an oval ulcer, like that in the preceding specimen. The form of the base of the ulcer indicates that it made progress from the mucous to the peritoneal coat, by several distinct steps or stages. xv. 29

From a girl, 20 years old, who, while in apparently good health, was suddenly attacked by acute peritonitis, and died in twenty hours.

Presented by J. F. Harding, Esq.

1913. The Pyloric extremity of a Stomach. There is a deep ulcer, one and a half inches long by two-thirds of an inch broad, situated about one inch from the pylorus on the posterior surface near the lesser curvature. The edges of the ulcer are thickened and overhanging, and on the floor, partly formed by the pancreas, the extremities of two blood-vessels filled with clot are seen. A contraction of the stomach was produced by the ulcer to such an extent that only the little finger could be passed through it. The pylorus, at the lower part of the specimen, is laid open.

From a woman aged 54 years, who was admitted to the Hospital with vomiting about one hour and a half after food, tenderness over epigastrium, and hæmatemesis. About twenty-two years before she had an attack of vomiting after food, which lasted a few weeks, and she had had similar attacks of varying duration every few years, but without hæmatemesis.—*Matthew Ward Book*, vol. viii, p. 197. See *Post Mortem Book*, vol. vii, p. 452; also *Pathological Society's Transactions*, vol. xxxi, 1881.

1914. Portion of a Stomach, exhibiting a large ulcer with cleanly cut margins, which at the upper part has penetrated the wall of the stomach by two irregular openings. There is another smaller, elongated, but deeper ulcer nearer the pyloric orifice. The wall of the stomach, especially the mucous membrane, is much thickened. A piece of glass tube is inserted into the cardiac orifice.

From a man, aged 57 years, who had been already ill nine months before his admission to the Hospital, with pain in the abdomen, constant pyrosis, but without vomiting of food.—See *Matthew Ward Book*, vol. vii, p. 355. *Post Mortem Book*, vol. vii, p. 370; and *Pathological Society's Transactions*, vol. xxxi, 1881.

1915. Part of a Stomach, with small portions of the Liver and Pancreas adherent to it. There is a large and deep oval ulcer just below and to the right of the cardiac orifice of the stomach, which has extended into the pancreas, destroying in its progress a portion of the splenic artery. A bristle is introduced into the ulcerated orifice of the artery, from which fatal hæmorrhage took place into the cavity of the stomach. xv. 14

1916. Ulceration of the Mucous Membrane lining the Stomach. In its progress, a considerable artery, indicated in the preparation by a bristle, was opened, and the patient died from the consequent hæmorrhage. 99

From the collection of J. R. Farre, Esq., M.D.

1917. Stomach of a man, aged 22, who died from typhoid fever. The intestinal ulcers had perforated the bowel, and vomiting was a marked symptom of the peritonitis consequent upon the perforation. In the smaller curvature of the stomach are

three patches in which the mucous membrane is of a dull white colour, obviously sloughed: these sloughs being quite continuous with the surrounding mucous membrane. The size of each slough was equal to a sixpenny piece. Around each of these was a dark hyperæmic ring, and several large vessels were connected with each spot. Besides these sloughs, there are two ulcers of about the same size, but perfectly clean and with sharply cut edges. There seems to be little doubt that these appearances were due to simple gastric sloughing and ulceration in the earliest stages, and not to any specific lesion. The stomach was full of altered blood.—See *Post Mortem Book*, vol. ii, p. 306.

CICATRISATION OF ULCERS.

1918. Part of a Stomach, with the scar of an ulcer in its mucous and sub-mucous tissues. The place of the scar is marked by radiating wrinkles of the mucous membrane, which converge to it. The membrane itself, both at and around the scar, appears healthy. The ulcer was probably a simple chronic one, such as in Nos. 1910 and 1911, &c., has proceeded to perforation of the stomach.

MORBID GROWTHS.

POLYPUS.

1919. A Stomach, exhibiting numerous pendulous and lobulated growths, like polypi, springing from its mucous membrane. They apparently consist of a tissue similar to that of the membrane itself. The intervening parts of the mucous membrane have a peculiar villous appearance, like the interior of small intestine when the villi are distended. XV. 17

1920. A small Polypoid Growth, suspended from the mucous membrane of the stomach. Its surface is darkened by granules of black deposit. APPENDIX. 3

1921. Pyloric portion of a Stomach from a man, aged 68 years, who died from apoplexy. The mucous membrane is thrown into ridges, and several small pedunculated tumours (as in No. 1919) are attached to it. The largest was, in the recent state, the size of a cherry.—See *Post Mortem Book*, vol. i, p. 322. XV. 41

A drawing is preserved, No. 208.
Vide No. 1907.

CANCER.

1922. Stomach from a woman aged 47 years. The organ is very small, and all parts are greatly thickened by a cancerous infiltration, except the cardiac and pyloric orifices. The walls are quite three-quarters of an inch thick, and the stomach looks almost like a gizzard. The ileum and the omentum were also affected with cancer.—See *Post Mortem Book*, vol. iii, case 146.

1923. The half of a Stomach enlarged, with thickening and induration of its coats from the formation of scirrhous cancer. XV. 5

1924. Section of a small contracted Stomach, exhibiting similar changes. XV. 16

1925. Cancer of the Pylorus. A scirrhous tumour projects from the serous surface externally, near the commencement of the duodenum. 105

From the collection of J. R. Farre, Esq., M.D.

1926. Scirrhous Cancer of the Pylorus. 101

From the collection of J. R. Farre, Esq., M.D.

1927. A Stomach, with a large round lobular tumour at the pyloric end, and smaller tumours near it. The largest tumour is attached to the exterior of the

pylorus and the adjacent parts of the stomach and duodenum. It consists of a close-textured, broken, medullary substance, intersected by white bands. Some of the other tumours project into the cavity of the pyloric portion of the stomach; and in the corresponding part of the mucous membrane there is a large ulcer with elevated and everted edges. xv. 3

1928. The Pylorus, seen from the inner aspect of the Stomach. It is almost completely surrounded by a soft, spongy mass of medullary cancer. xv. 38

From the body of a man, aged 40 years, who had suffered for some months (six or seven) from an obscure affection of the abdomen. The growth could be felt beneath the abdominal wall, in the epigastric region, as a soft, movable tumour, apparently as big as an orange. A prominent symptom during life was very severe pain at the epigastrium.

1929. A Stomach, with a large, probably medullary tumour growing from its mucous membrane near the pylorus. The tumour is of an oval form, lobed on its surface, and consisting of a firm substance intersected by white lines. The mucous membrane immediately around it is thickened and indurated. xv. 12

From a man 52 years old. The disease appeared to have been four years in progress.

Presented by William Radnor, Esq.

1930. Part of a Stomach, showing an extensive deposit of medullary cancer projecting from its mucous aspect into the interior of the organ. xv. 34

1931. Portion of the great end of a Stomach, exhibiting a large cancerous ulcer of its coats. The arch of the colon is adherent to the diseased part, and is penetrated by the ulcer extending through it from the stomach. xv. 19

1932. A large nodular growth of Medullary Cancer, involving the cardiac extremity of the stomach, and projecting into its interior from the mucous lining. 106

From the collection of J. R. Farre, Esq., M.D.

1933. Cancerous Deposit at the Pylorus, with a large ulcer extending over the adjacent surface of the stomach. 104

From the collection of J. R. Farre, Esq., M.D.

1934. Portion of the great end of a Stomach, exhibiting ulcers (? cancerous) on its mucous membrane. Each ulcer is nearly circular, and has a smooth elevated surface, and a thickened margin. The intervening portions of the mucous membrane appear healthy. xv. 20

COLLOID CANCER.

1935. Portion of a Stomach, exhibiting the changes of structure characteristic of Colloid Cancer, with ulceration of its coats. There is a large and deep ulcer of circular form, the base and borders of which are formed by a thick, hard, fibrous tissue, containing minute cells filled by a clear jelly. In two situations the ulcer has penetrated all the coats of the stomach. xv. 2

1936. Extensive Colloid Cancer of the Stomach and Omentum. xv. 37

From a woman, aged 48 years, in whom symptoms referable to the disease had existed for seven months.

1937. Part of a Colloid Cancer of the Stomach. In addition to the structure common to such a growth, it contains numerous white deposits scattered irregularly amongst the loculi. They are hard and calcified.

INJURIES OF, AND OPERATIONS UPON THE STOMACH.

RUPTURE.

1938. Portions of the Stomach and Œsophagus of a middle-aged man, who, it was supposed, had attempted to poison himself with laudanum. There is an extensive laceration through all the coats of the stomach, a little beyond the entrance of the œsophagus, and other smaller lacerations are visible in the adjacent parts of the mucous and peritoneal coats. A large quantity of blood is effused from the lacerations into the surrounding tissues of the stomach. XV. 18

These lacerations were the effects of over-distension, the stomach-pump having been too freely used for the removal of the poison.

1939. Portion of a Stomach and Duodenum. There is an irregular aperture more than an inch in width, extending through all the coats of the stomach near the pylorus. In several other parts the peritoneal coat is irregularly torn. XV. 22

These injuries were produced by the crushing of the abdomen, the stomach at the time being full of food.

EFFECTS OF POISONS.

Mineral Acids.

1940. The Stomach of a person who died in consequence of having taken sulphuric acid. The deep red colour, mottled with black, and extending throughout the interior of the stomach, is occasioned by blood effused from the eroded vessels and acted on by the acid. The greater part of the mucous membrane is destroyed, and the surface exposed is rough and shaggy. In the œsophagus and near the pyloric end of the stomach, portions of the mucous membrane remain, and are red, thick, and corrugated. XV. 9

The duodenum of the same patient is in the next Series, No. 2042.

1941. A Stomach from a young woman, exhibiting the effects of sulphuric acid. There is an aperture with ragged edges, about half an inch in diameter, in the middle of the great arch of the stomach. The mucous membrane around the aperture is thickened, black, and charred by the acid. The stomach is closely contracted. XV. 15

1942. The Stomach of a young woman who died thirty hours after taking nearly an ounce of sulphuric acid. It is contracted, and, in its interior, deeply corrugated. The mucous membrane is thickened and indurated, and of a deep black and crimson colour from congestion and extravasation of blood. These effects of the acid are most distinct on the summits of the ridges formed by the corrugated mucous membrane. XV. 23

1943. The Stomach of a woman who died ten days after taking sulphuric acid. Part of its mucous membrane is soft and of a dirty ash-brown colour, and near its pyloric end a portion between three and four inches in diameter has sloughed, and, except at one margin, has been completely separated. The slough hangs loosely; it is very soft and flocculent at its edges, and of brown and yellow colour. About the cardiac orifice of the stomach (which is shown at the back of the preparation) there is a rough and somewhat granulated surface, from which a layer of mucous membrane, after sloughing, completely separated. XV. 27

A drawing is preserved, No. 215.

1944. Part of the Œsophagus of the same patient, exhibiting an extensively and

irregularly ulcerated surface from which a slough of mucous membrane separated. The destruction has been most extensive in the lower part of the œsophagus, the ulcerated and granulating surface of which was continuous with that of the cardiac orifice of the stomach shown in the preceding preparation. Part of the slough, a portion of which includes the whole circumference of the lining membrane of the œsophagus, is suspended in the upper part of the bottle.

XV. 28

It is uncertain how much sulphuric acid the patient swallowed. She lived ten days, and appeared to have recovered from the effects of the poison, when she died with bronchitis.

1945. Two portions of blood clot vitrified by sulphuric acid. They were taken from the inferior vena cava of a man who swallowed about a pint of sulphuric acid. A considerable part of the stomach was destroyed and the acid escaped into the abdominal cavity and penetrated its contents.—See *Post Mortem Book*, vol. vii, p. 103.

1946. Part of a Stomach, showing several large, but healing, ulcers. XV. 35

From the body of a man who died eleven days after swallowing about two ounces of strong hydrochloric acid.—See *St. Bartholomew's Hospital Reports*, vol. x, p. 435.

1947. A Stomach and Œsophagus, from a case of poisoning by nitric acid.

XV. 36

Other Corrosive Poisons.

1948. The Stomach of a person who died in consequence of having taken oxalic acid. The greater part of the mucous membrane is of a dark brown colour, and very soft. Small vessels, full of black blood, are in many parts traceable beneath it. In some situations it is so completely disorganized as to have spontaneously separated in loose shreds. Upon the œsophagus the mucous membrane is corrugated. XV. 10

A drawing is preserved, No. 217.

1949. Stomach of a woman, aged 46 years, who committed suicide by swallowing a quantity of Burnett's solution of chloride of zinc.

Presented by W. B. Kesteven, Esq.

GASTROSTOMY.

1950. Stomach with adjacent portions of abdominal and thoracic walls, from a man, aged 38 years, on whom the operation of gastrostomy was performed one week before death, on account of cancerous stricture of the œsophagus. The position of the external wound may be best appreciated by observing its relation to the umbilicus and to the cartilages of the ribs, both of which are preserved in the specimen. The stomach is firmly united to the margins of the skin wound, and the skin wound, above and below its connection with the stomach, has healed. The sutures remain *in situ*.—See specimen, Series XV, No. 1845.

The case is related by Mr. Thomas Smith in the *Clinical Society's Transactions*, vol. v, 1872.

1951. A Stomach. About two and a half inches from the pyloric orifice, and rather nearer the lesser than the greater curvature is the vertical opening, with the integuments still attached to the margin, which was made in the operation of gastrostomy. The stomach was loosely glued to the parietal peritoneum, except on the left side of the opening; but the adhesions have now given way from the soaking to which the specimen has been subjected.

From a man, aged 55 years, who was admitted to the Hospital with a cancerous stricture of the œsophagus, which had prevented his taking solid food for a fortnight. Dyspepsia had existed about one month. A probang could not be passed. Gastrostomy was performed at the left linea semilunaris, and the stomach was attached to the sides of the wound by silver sutures, but was not opened until nine days later. The patient died exhausted on the third day after this operation. No evidence of peritonitis existed. Secondary nodules of hard cancer studded the surface of the lungs.

The œsophagus is preserved in Series XV, No. 1846.—See *Kenton Ward Book*, vol. vi, p. 75.

SERIES XVIII.

DISEASES AND INJURIES OF THE INTESTINES.

DILATATION.

1952. The Large Intestine of a child, enormously distended. It contained a large bucket-full of fluid fæcal matter, which had been gradually accumulating from the time of the formation of the stricture in the rectum shown in specimen No. 2079. XVI. 94

Presented by Thomas Wormald, Esq.

ABNORMAL CONDITIONS OF THE MUCOUS MEMBRANE.

1953. Portion of an Ileum. The Peyer's and the solitary glands are enlarged and very prominent. The villi are also very turgid; but their tissue, like that of the rest of the intestine, appears healthy. XIV. 16

From the same patient as No. 1554 in Series VIII. Death was the consequence of diabetes.

1954. A Cæcum, exhibiting a remarkable development of its follicles, the large open orifices of which are seen on every part of the mucous membrane. XVI. 26

From the same patient as the preceding.

1955. Portion of a Jejunum, the coats of which are generally thickened. There is also a diffuse superficial ulceration of the mucous membrane, with deeper ulcers of the free margins of the valvulæ conniventes. XVI. 15

From a patient who died with a medullary and melanotic tumour in the liver, and from whom No. 1956 in this Series, and No. 2214 in Series XXI were taken. The case is described by Mr. Langstaff, in the *Medico-Chirurgical Transactions*, vol. iii, p. 277. London, 1812.

1956. Portion of a Colon, exhibiting a general thickening and induration of the mucous membrane, with wart-like excrescences, and numerous small ulcers upon its internal surface. XVI. 24

From the same patient as the portion of Jejunum shown in the preceding specimen.

CHANGES IN CHOLERA.

1957. Portion of an Ileum. The Peyer's and solitary glands and the villi are of unusually large size. XVI. 8

From a patient who died with Asiatic cholera.

1958. Portion of an Ileum, from a patient who died with cholera in the epidemic of 1848. Its mucous membrane is dark through fulness of its blood-vessels, and its villi and solitary glands are very large. Some of the latter are raised above the surface, as if on pedicles. XVI. 96

FÆCAL FISTULA, AND ABSCESSES OPENING INTO THE INTESTINE.

1959. A Cæcum, with parts of the ascending Colon, and of the abdominal wal

from the right inguinal region. The portion of glass marks the track of a large abscess, which at one extremity communicated by two apertures with the intestine, and at the other end opened by extensive sloughing through the groin and scrotum. The edges of the apertures in the intestine are soft and shreddy: the parts adjacent to them are not thicker or harder than usual: but near the uppermost of them is a circular spot, in which the coats of the intestine are thin and soft; at this part the mucous membrane only remains: its inner surface is smooth and polished. XVI. 70

The patient was a man 38 years old. The history of the case, as well as the appearances here shown, make it probable that there was first an abscess in the iliac fossa, which, opening into the cæcum, permitted the escape of fæces, and sloughing of the tissue extending from the iliac fossa through the groin into the scrotum followed.

1960. A Cæcum, with a portion of the abdominal walls from the right inguinal region. The anterior part of the cæcum is united to the peritoneum lining the adjacent muscles; at this part also the mucous membrane of the cæcum is removed, and irregular fungous growths occupy its place. A fistulous canal, through which a quill is passed, extends from the cavity of the cæcum through the middle of the growths, and through the adjacent parts of the abdominal walls. XVI. 28

The patient was a man 35 years old. An abscess in the groin had existed, it was believed, previous to the ulceration through the cæcum. There was similar ulceration, with fungous growths, in parts of the small intestine.

1961. A Cæcum, with part of the Colon. There is a round ulcerated aperture through that portion of the wall of the cæcum, which was connected with the iliac fossa. On the exterior of the wall, the margins of the aperture are uneven and ragged; on its interior they are smooth and clean. The portion of tissue which is attached to the exterior of the cæcum around the aperture was part of the wall of a large abscess. The rest of the mucous membrane and the other coats of the cæcum are healthy. XVI. 83

The patient, an elderly man, had undergone the operation of lithotomy a week before death. Suppuration by the sides of the bladder and rectum, and all round the cavity of the pelvis, followed; and, extending into the iliac fossa under the pelvic fascia, some of the pus discharged itself through the fascia into the cæcum a short time before death.

1962. The sigmoid flexure of a Colon, into the cavity of which an abscess opened from without. The abscess was seated in the cellular tissue connecting the outer part of the intestine with the wall of the abdomen, and a part of its cavity, which is very irregular in form, is shown at the back of the preparation. Portions of whalebone are passed through two short fistulous canals by which the abscess opened into the intestine. The apertures through the mucous membrane are oval and regular: their borders are sharp and even; and there is no thickening or other morbid change in the adjacent coats of the intestine. XVI. 73

The disease was not observed during the life of the patient, who was a man about 30 years old, and died of pulmonary phthisis. The rest of the intestinal canal was healthy.

ULCERATION OF THE INTESTINE.

FOLLICULAR AND SIMPLE ULCERATION.

1963. Portion of a Colon generally thickened, and exhibiting numerous minute ulcers of its mucous membrane. XVI. 29

1964. Portion of an Ileum, exhibiting a broad, smooth-based ulcer of its mucous membrane, and a portion of omentum firmly adherent to its exterior in the situation of the ulcer. XVI. 40

PERFORATING ULCERS.

1965. Portions of a Duodenum and Stomach, from a young man. A circular ulcer with smooth abrupt margins has completely penetrated the coats of the duodenum close to the pylorus. XVI. 67

The patient had a hernia, and the signs of peritonitis, produced by the escape of the contents of the duodenum through the ulcer, so nearly coincided with an apparent increase of the protrusion, that it was supposed that the hernia had become strangulated. Previous to the perforation of the intestine, the patient had been subject to dyspepsia. He died about fourteen hours after the commencement of the peritonitis.

1966. The commencement of the Duodenum and pyloric orifice of the stomach. About half an inch beyond the pylorus there is a small ulcer, which has perforated the duodenum. The mucous membrane around the ulcer is thickened.

From a man, aged 22 years, who had suffered from pain after food for four months. Finally, a sudden acute attack of pain was followed by peritonitis, and death within twenty-four hours.—See *Path. Soc. Trans.*, vol. xxxi, 1881.

Presented by Dr. Norman Moore.

1967. A large Ulcer of the Duodenum. The ulcer is situated just outside the pyloric orifice of the stomach, on the lower and anterior surface of the duodenum. The base of the ulcer, which is much more extensive than the orifice, is formed almost entirely by the pancreas, which has become dense and cicatricial from the formation of connective tissue. At the lower and anterior part of the ulcer, in front of the pancreas, is a perforation which was the cause of death. On microscopic examination, the base of the ulcer was found to be formed of cicatricial tissue alone. There was no evidence of a new growth.

The patient was a gentleman, 56 years old, who for two or three years before his death suffered at first occasionally, and later almost daily, from pain to the right of the epigastrium about two hours after a full meal. Occasionally there was an exacerbation with pyrosis.

Shortly before death he had several severe attacks of melæna and occasional vomiting, the vomit containing sarcinæ ventriculi.

The patient had constitutional syphilis.

Presented by Mr. F. S. Eve.

1968. A convolution of the Jejunum. An irregular ulcer of uncertain nature completely through the coats of its two contiguous and adherent portions. XVI. 14

ULCERATION FOLLOWING BURNS AND SCALDS.

1969. A Duodenum, with part of a Stomach. There are two oval ulcers about half an inch in diameter, and many of smaller size, in the mucous membrane of the duodenum. The two large ulcers have extended beyond the mucous membrane, and penetrated all the coats of the intestine. One of them is closed by the contiguous adherent surface of the pancreas: the other opened into the cavity of the abdomen. XVI. 55

From a child, about 10 years of age, who died suddenly during the progress of recovery from a burn.

DYSENTERY.

1970. Swollen and villous appearance of the Mucous Lining of a portion of large intestine anterior to ulceration. XVI. 109

From a case of dysentery.

1971. A similar specimen, showing commencing ulceration, involving especially the various rugæ. XVI. 110

1972. Portion of Intestine, of which all the coats are thickened. The mucous membrane is thrown into irregular eminences, which exhibit a rough surface and numerous minute points of ulceration. XVI. 17

From a patient who died with dysentery.

1973. Portion of a Colon. Its mucous membrane is generally thickened and indurated: and there are numerous small, but deep, oval ulcers in it, with sharply circumscribed borders, which extend down to the muscular coat, and in many instances lead to more widely spread ulceration in the submucous tissue. The muscular and peritoneal coats appear healthy. XVI. 74

From a patient who died with dysentery at the General Penitentiary, Millbank.

1974. Part of the Large Intestine from a boy. It presents the ordinary characters of dysentery in its early and acute stage. 119

From the collection of J. R. Farre, Esq., M.D.

1975. Portion of a Colon, from a case of dysentery. Small portions of the surface of the mucous membrane, of various forms, are removed by ulceration. All the ulcers are situated on the free margins of the transverse folds of the mucous membrane, and by the sides of the lines formed by the longitudinal bands of muscular fibres. Their form is generally oval, or elongated in the direction of the transverse folds. XVI. 80

1976. Another portion of the same Colon, from its lower part. By the extension of such ulcers as are shown in the preceding specimen, nearly the whole surface of the mucous membrane is removed. Portions of it remain hanging in shreds: and in some places the ulceration has extended to the muscular coat. The coats of the intestine were soft, easily torn, dark, and infiltrated with dirty-coloured fluid. XVI. 81

From a patient in the Penitentiary, Millbank. The whole length of the colon was similarly diseased, the extent of the disease increasing from the upper to the lower part.

Presented by Dr. Baly.

1977. Portion of a Colon, in which the mucous membrane is extensively and raggedly ulcerated. Large pieces of its remains hang in shreds in the cavity of the intestine. Many small distinct ulcers, also, may be seen, the result, apparently, of disease of the follicles of the intestine. XVI. 21

From a man who died with dysentery of long continuance. The whole of the large intestines were similarly diseased. The small intestines and other abdominal organs were healthy.

1978. Ulceration and sloughing of the mucous membrane of a portion of the large intestine. XVI. 108

From a case of dysentery.

1979. Extensive disintegration and sloughing of the mucous membrane, showing a more advanced stage of the dysenteric affection. XVI. 111

1980. A similar specimen. XVI. 112

1981. Portion of large Intestine, the mucous coat of which is extensively destroyed by sloughing. XVI. 113

From a case of dysentery.

1982. Portion of large Intestine. The mucous coat throughout thickened and pulpy, is in parts destroyed, and hangs from the surface in shred-like sloughs. XVI. 114

From a case of dysentery.

1983. Portion of large Intestine, the mucous coat of which is almost entirely destroyed by sloughing. XVI. 115

From a case of dysentery.

1984. Portion of large Intestine, showing the contraction consequent upon the cicatrisation of dysenteric ulcers. XVI. 116

The six preceding specimens and Nos. 1970 and 1971 are described by Dr. Baly in the Gulstonian Lectures, 1847.

1985. Portion of Colon from a case of dysentery : several of the ulcers have perforated the walls of the intestinal canal. 121

From the collection of J. R. Farre, Esq., M.D.

1986 A Sigmoid Flexure, from a case of chronic dysentery. It shows the worm-eaten appearance of the mucous lining after the healing of the ulcers, as well as the narrowing of the canal from the contraction of the cicatrices. XVI. 126

1987. Contraction, with extreme narrowing of the intestinal canal, of a portion of Colon, consequent upon the healing and cicatrisation of a dysenteric ulcer. 126

From the collection of J. R. Farre, Esq., M.D.

ENTERIC FEVER.

1988. Portion of small and large intestine, from a girl, aged 12, who died from enteric fever, on about the twelfth day of the disease. The jejunum was natural. Nearly all the solitary and lymphatic follicles of the ileum were found more or less swollen, the swelling becoming more and more marked towards the ileo-cæcal valve. Near the valve the swelling is extreme, but there is no trace of ulceration. The mesenteric glands were much swollen. The large intestine was natural.—See *Post Mortem Book*, vol. iii, p. 99, 1872.

1989. The lower portion of the Ileum with the ileo-cæcal valve. The mucous membrane is thickly covered by characteristic typhoid ulcers, on many of which the slough is still attached. Ulcers extend along the whole length of the margin of the valve.

From a young man, who died on the tenth day of enteric fever, which he took while in the Hospital.

1990. The lower portion of an Ileum, with part of a Colon, from a patient who died in an early stage of the fever. Patches of Peyer's glands at the end of the ileum, and many of the solitary glands in the colon, are much enlarged, soft, and prominent above the surrounding surface of the mucous membrane ; but there is scarcely any appearance of ulceration or sloughing. The mesenteric glands also are enlarged and soft. XVI. 87

1991. Ulceration of Peyer's patches and Solitary Glands associated with enteric fever. The ulcers are small, but deeply excavated, and are surrounded by thickened tissue. 115

From the collection of J. R. Farre, Esq., M.D.

1992. A somewhat similar specimen, in which, however, the ulcers are less excavated, and the thickening around less considerable. 116

From the collection of J. R. Farre, Esq., M.D.

1993. The lower part of an Ileum, exhibiting enlargement and elevation of the patches of Peyer's glands, with sloughing and ulceration of small portions of their surface. Some of the sloughs, incompletely detached, are infiltrated with fæcal matter. The portions of intestine intervening between the patches appear healthy. XVI. 20

From a patient who died with enteric fever.

1994. A Cæcum with a portion of the Ileum, exhibiting enlargement and sloughing of the Peyer's and Solitary Glands. Many of the glands are simply enlarged ; others have sloughed with portions of the tissue in which they lie ;

and in most instances the sloughs appear to have been in process of detachment. There are also several ulcers in the cæcum and its appendix. XVI. 48

From a case of enteric fever.

1995. A similar specimen. XVI. 49

1996. The termination of an Ileum, with the adjacent portion of the Cæcum. The mucous lining of the small intestine is ulcerated. Some of the ulcers involve the solitary glands, others the Peyer's patches. The latter are laden with sloughs, formed of the mucous and sub-mucous coats, infiltrated with granular lymph, and at points discoloured from adhering fæces. The edges of the ulcers are irregular, raised, and everted, and the mucous membrane around, independently of the solitary glands, appears swollen and œdematous. The largest ulcer involves one surface of a cusp of the ileo-cæcal valve, and terminates abruptly at the margin, and fails to implicate the side which is continuous with the lining of the large intestine. XVI. 125

From a case of enteric fever.

1997. Portion of Ileum from a case of enteric fever. Most of the Peyer's and solitary glands, with their investing and connecting tissues, have sloughed. Some of the sloughs have been separated, leaving nearly smooth ulcers based on the sub-mucous tissue; others remain still attached, dark and soft. The borders of the Peyer's patches, and of the smaller ulcers, are, for the most part, raised, inverted, and overhanging, as if in progress of healing. But, in one of the Peyer's patches (the fourth from the top), the ulceration has made further progress, and perforated the intestine. XVI. 97

1998. Ulceration of the Intestine in Enteric Fever. Irregular sloughs hang from the ulcerated surfaces. 117

From the collection of J. R. Farre, Esq., M.D.

1999. Portion of an Ileum, from a case of enteric fever, exhibiting an ulcerated surface of the mucous membrane after the detachment of numerous sloughs like those in No. 1993. XVI. 22

2000. Portion of an Ileum, from a case of enteric fever. Sloughs, including large portions of two patches of Peyer's glands, have been separated, and other portions, nearly detached, hang in loose shreds into the cavity of the intestine. The surface, exposed by the separation of the sloughs, is formed by the circular muscular fibres of the intestine, which appear healthy, and is surrounded by a thin overhanging border of apparently healthy mucous membrane. Several small ulcers, remaining after the complete separation of sloughs of the solitary glands, are situated between the two principal ulcers. XVI. 79

Presented by Dr. Hue.

2001. The lower extremity of the Ileum, showing extensive ulcerations, the consequence of enteric fever, by which the circular muscular fibres are exposed. At one point a circular opening, an inch in diameter, marks the destruction of the entire thickness of the intestinal wall. Here the fæces escaped into the cavity of the peritoneum, and gave rise to fatal peritonitis. A few shreds of lymph are attached around the serous aspect of this aperture.—See *St. Bartholomew's Hospital Reports*, vol. ix, p. 31. XVI. 117

2002. The last eight inches of an Ileum, in which there are several large circumscribed ulcers of the mucous membrane. The ulcers are nearly circular, and from a quarter to three quarters of an inch in diameter; some have coalesced, and formed large and less regular ulcers. The bases of the ulcers are smooth and level, and formed by the circular muscular fibres of the intestine, which appear healthy; their borders are bounded, and to a small extent overlapped by

the adjacent mucous membrane, which, except in being rather thickened, appears to have preserved its natural texture. XVI. 75

It is probable, as well from the history of the case as from the characters of the specimen, that these ulcers were formed by the separation of sloughs of Peyer's glands, in the course of enteric fever, and were in progress of healing.

003. Portion of an Ileum, from a case of enteric fever. Three patches of Peyer's glands are enlarged, and small portions have separated by sloughing from their centres. There is also a general enlargement of the solitary glands, which project like little conical papulæ from the surface of the mucous membrane. XVI. 88

004. Portion of a Colon, in which there are several small ulcers of the mucous membrane, remaining after the separation of sloughs in a case of enteric fever. The bases of the ulcers are formed by the circular muscular coat of the intestine, which appears healthy; their margins are formed by thin portions of mucous membrane overhanging their bases. The intervening mucous membrane and other tissues appear healthy. XVI. 89

005. Portions of an Ileum, in which two small ulcers, like those last described, have nearly healed. The muscular coat cannot be seen at their bases, and their margins, which probably were overhanging but have united to their bases, are smooth and shelving. XVI. 90

006. Another portion of the same Ileum, in which are several similarly healed small ulcers, and one of larger size, in which a further process of ulceration has extended from the middle of the base of the ulcer in the mucous membrane, through the muscular and peritoneal coats, forming an elongated oval opening by which the intestine communicated with the cavity of the abdomen. XVI. 91

The four preceding specimens, and No. 1990, were taken from patients who died with enteric fever at Vienna.

Presented by Charles Moore, Esq.

Vide Nos. 2058, 2061, Series XIX.

SYPHILITIC ULCERATION.

007. Extensive Ulcers, almost surrounding a portion of a Colon on its mucous aspect. From a syphilitic patient. 124

From the collection of J. R. Farre, Esq., M.D.

Vide Nos. 2058, 2061, Series XIX.

TUBERCULAR ULCERATION.

008. Portion of a small Intestine. There are two small superficial ulcers on the mucous surface, and the peritoneum is studded with tubercular nodules of various sizes.

From a child, aged 3 years, who died with general tuberculosis. Part of the dura mater is preserved in Series XXX, No. 2458.—See *Post Mortem Book*, vol. viii, p. 46.

009. The lower end of an Ileum, with the Cæcum and its Appendix. The mucous membrane is extensively destroyed by tubercular ulceration. The chief ulcers in the ileum and cæcum are large and oval; those in the cæcum have their long axis at right angles to the axis of the canal, and, in some instances, nearly encircle it. Mingled with the larger are a few smaller ulcers, which may have originated in the solitary follicles, and are chiefly found in the appendix of the cæcum. The general characters of the ulcers are, that they are circumscribed by an elevated, slightly undulating border, which just overhangs their bases, and is nowhere everted; and that their bases are irregularly excavated, and raised in the intervals between the excavations, as by the crowding and coalescence of small ulcers and of intervening tubercular deposits. XVI. 100

2010. Small Intestine, with Ulceration of the Mucous Membrane, probably tubercular. 113

From the collection of J. R. Farre, Esq., M.D.

2011. Extensive Tubercular Ulcers of Small Intestines, showing their transverse direction to the axis of the canal. 114

From the collection of J. R. Farre, Esq., M.D.

2012. Portion of Small Intestine, with tubercular ulcers extending completely around its canal; their surfaces are rough and irregular, their edges raised above the level of the adjacent membrane. Tubercles are deposited around, and in the tissues between the bases of the ulcers and the peritoneal coat, projecting in whitish masses upon the serous surface. At two points the ulcers have all but perforated the coats of the intestinal canal.—See *St. Bartholomew's Hospital Reports*, vol. vi, p. 239. XVI. 104

2013. A specimen similar to the preceding, but the lower and central ulcers have partially healed, and in the upper two, small perforations exist. XVI. 105

2014. Portion of a Jejunum, with a tubercular ulcer of its mucous membrane. The ulcer is of an oval form, and penetrates, at one point, the coats of the intestine. There are small tubercles beneath the corresponding portion of the peritoneum. XVI. 12

2015. Portion of a Jejunum, in which a tubercular ulcer has completely perforated its coats, making an aperture nearly half an inch in diameter at the bottom of an ulcer of rather wider extent. At the upper part of the intestine there is another ulcer, which has at one part extended through the muscular, as well as the mucous, coat. The peritoneal coat of the intestine is thinly covered by soft lymph. XVI. 76

2016. Portion of a Colon, in which a large superficial ulcer has nearly cicatrised. The healed surface is contracted and irregularly wrinkled; and there are several small oval apertures in it, which have smooth margins and edges. XVI. 71

From a patient, 50 years old, in whose lungs there were several masses of calcareous substance, and dry grey tubercles, but who died of a disease independent of the condition of both the lungs and the intestines. Part of the lung is preserved in Series XI, No. 1726.

SIMPLE STRICTURE.

2017. Portion of a descending Colon, the canal of which is at one part suddenly reduced to a quarter of an inch in diameter. Its walls at this part are slightly thickened and indurated, and a narrow band passes across its canal, dividing into two small apertures the orifice by which the portions above and below the stricture communicate. The appearances are as if there had been an ulcer of the mucous membrane, the healing of which had been attended by contraction of the surrounding intestinal walls and adhesion of a part of its opposite surfaces. Both above and below the stricture the tissue of the colon appeared healthy: but its canal below was very small, while above it was enormously distended with fæces, and burst about two inches from the stricture. XVI. 82

The patient was a lady about 30 years old. She had been for three years subject to occasional attacks of obstinate constipation, which were generally followed by diarrhœa. Four months before her death, the obstruction of the intestines became complete, and after this time she had no fæcal evacuation. The cause of obstruction was found to be a cherry-stone which had lodged above the stricture in the colon, and completely closed the canal.

Presented by Thomas Wormald, Esq.

2018. Stricture, apparently non-cancerous, of the ascending Colon, five inches from the ileo-cæcal valve. The canal is contracted very considerably, and

there is superficial ulceration of the mucous surface of the intestine around the orifice of the strictured portion.

From a female, aged about 55, who for about five months before death had suffered from frequent constipation, with vomiting and abdominal pain and distension. For fifty-one days before death there was no action of the bowels, except in the expulsion of gas, nor was any food taken into the stomach for the same period. She drank at intervals a little brandy and water, wine and water, and lemonade, occasionally a little orange juice, and the juice of a few grapes. Almost every day she vomited bile with the "secretions of the stomach." There was no sign of peritonitis, nor of peritoneal adhesions; no enlarged lymphatic glands; no deposit in the liver. The limbs were much wasted; but there was a considerable amount of fat on the abdomen, and in the mesentery and meso-colon.

Presented by Mr. Briscoe.

Vide Nos. 1986, 1987.

MORBID GROWTHS.

FIBROUS TUMOUR.

2019. Fibrous (?) Tumours in the Ileum, causing partial obstruction of the bowel and a pouch-like dilatation above them.

From a woman, aged 43 years, who died from pyæmia.
The case is fully described in the *Medical Times and Gazette* for March 3rd, 1866.

CANCER.

2020. A portion of Intestine from the lower part of the Sigmoid Flexure. The canal is almost obliterated by a growth from the mucous membrane around the whole circumference of a limited portion of the bowel, about one inch in length. A passage not larger than a crow-quill still exists through the centre of the growth.

The microscope showed that the growth was a cylindrical-cell cancer.
From a woman, aged 69 years, who died soon after the performance of colotomy for the relief of chronic intestinal obstruction. Microscopic sections are preserved, No. 86.—See *Lawrence Ward Book*, vol. vi, p. 458.

2021. Portion of the Sigmoid Flexure dilated, but not materially hypertrophied, above an annular stricture of the intestinal canal. Below this stricture is a crop of exuberant granulations, springing from an irregular, warty, ulcerated surface. At the point of stricture the walls are thickened and infiltrated with a scirrhous deposit, upon which has grown the soft medullary mass seen below. A bougie is passed through the narrow portion of the canal. XVI. 127

2022. Portion of Jejunum and two portions of Ileum. In each portion of intestine there is a circular constriction by which the canal is almost completely closed. At each of the constricted parts there is a cancerous growth springing from and infiltrating the wall of the intestine in a narrow band, extending around the whole circumference of the mucous membrane. Above each of them the intestine is widely dilated, its coats are generally thickened, and the muscular coat especially appears hypertrophied. XVI. 7

The patient, a woman, 37 years old, suffered for three years before death with attacks of constipation and severe pain in the abdomen. The strictures were about two feet distant from each other; and there was another besides the three here shown.

Presented by John Bury, Esq.

2023. Part of the Sigmoid Flexure of the Colon, laid open. A soft villous malignant growth springing from the mucous membrane, surrounds and almost obliterates the canal.

From the body of a woman, aged 49 years, who, having had for a few weeks occasional abdominal pain and constipation, which at length amounted to nearly complete obstruction, was suddenly attacked with extreme abdominal pain, with faintness, and died in a state of

collapse in about three hours. On dissection it was found that the transverse colon had been drawn down in the shape of a V, by a piece of omentum that was adherent to the sac of an old left femoral hernia. The colon thus displaced had, on the occurrence of obstruction at the sigmoid flexure, become enormously distended, and at length the softened coats had given way by a large, thin-edged ulcer, through which fæcal matter had freely escaped into the peritoneal cavity.—See *St. Bartholomew's Hospital Reports*, vol. iv, p. 262; *Post Mortem Book*, 1867, p. 14.

2024. Portion of a Colon, with Medullary Tumours projecting into its cavity. The largest of these growths forms a broad band round the whole interior of the intestine, and must have almost completely obstructed the canal. Its texture is broken and flocculent. The adjacent walls of the intestine are thickened, but their texture does not appear altered. XVI. 25

2025. Portion of the Sigmoid Flexure of a Colon, presenting an annular constriction, at which its canal is reduced to a quarter of an inch in diameter. The constriction occupies about half an inch of the length of the canal; on its exterior it is marked by a drawing inwards of the wall of the intestine, as if a cord had been tied round it; the mucous membrane is slightly raised and villous. A piece of omentum is adherent to the exterior of the intestine at the strictured part; and all the tissues engaged in it appear indurated and confused. XVI. 98

2026. Portion of a Jejunum, with several small, disk-shaped, masses of medullary substance projecting into its canal from the sub-mucous tissue, in which they appear to have their origin. They are covered by mucous membrane. XVI. 19

2027. A Mass of New Growth, probably malignant, surrounding the small intestine and adjacent portion of the cæcum. 127

From the collection of J. R. Farre, Esq., M.D.

2028. Portion of a Colon. In the greater part of its extent, the sub-mucous coat is from one to two lines in thickness, and of close fibrous texture, elevating the mucous membrane into irregular folds. The section of the muscular coat exhibits numerous white bands intersecting a dense greyish structure, the surface of which has a somewhat glistening aspect. XVI. 23

Taken from the same patient as the scirrhous cancer, No. 1923, in Series XVII.

COLLOID CANCER.

2029. An Ileo-cæcal Valve, with parts of the Cæcum and ascending Colon. The several tissues forming the valve appear thickened and indurated with morbid deposit, which, in the recent state, had the characters of colloid cancer. The surface of the mucous membrane is roughly ulcerated. Similar disease, in less degree, exists in the immediately adjacent walls of the cæcum and colon. The aperture of the valve is an oval opening, about one quarter of an inch in diameter, apparently fixed in both size and form. XVI. 120

The patient was a woman 31 years old. The first signs of intestinal disease, consisting of frequently recurring severe spasmodic pains in the abdomen, were observed a month before death. Three weeks before death, constipation, which had not previously existed, began; and it continued to the time of death.

Presented by Mr. Dickinson.

INTESTINAL OBSTRUCTION.

2030. Portion of an Ileum, the cavity of which is distended by an oval biliary calculus, two inches and a half in length, and an inch and a half in diameter. The peritoneal coat of the distended part of the intestine is ruptured; and the other coats are thin and tense. XVI. 84

The patient was a lady, 62 years old, who had perfectly good health till within five days of her death, when she was attacked by vomiting and constipation. These were relieved on the third day, but shortly recurred, and she died tympanitic with complete intestinal obstruction. The calculus here shown had passed through a large ulcerated opening from the gall bladder into the ileum. The other large calculus which lies loose in the bottle had passed through another ulcerated aperture into the colon, and was found in the cæcum.

Presented by John Havers, Esq.

For Specimens of Obstruction from Simple or Malignant Strictures, vide Nos. 1987, 2017, 2018, 2020 to 2025, 2029, 2048 *to* 2050, 2066, 2067, 2073, 2079.
Obstruction from Internal Strangulation, vide Series XX, Nos. 2164 *to* 2177.
Obstruction from Displacements, &c., vide Herniæ and Intussusceptions, Series XX.

IMPACTION OF CONCRETIONS, AND FOREIGN BODIES, AND OTHER AFFECTIONS OF THE APPENDIX VERMIFORMIS.

2031. An Appendix Vermiformis, in which a mass of hardened fæces is lodged. XVI. 30

From a child who died with acute peritonitis.

2032. Appendix Vermiformis, from a man, aged 43 years, who died of abscess in the brain and liver. The point of a pin may be seen protruding from it into the cæcum, while the head is imbedded in a mass of hardened fæces. There was no sign of ulceration, or of either recent or old peritonitis.

2033. A Cæcum; the sharp point of a nail protrudes through an ulcerated aperture in the vermiform appendix. The head of the nail lies in the termination of the cul-de-sac, which is filled by some firm material. There was a small collection of pus around the protruding nail, but no peritonitis. Three or four small abscesses were found in the brain; one in the left centrum ovale being as large as a hazel nut. There were also abscesses in the bases of the lungs and purulent infarcts in the liver.

From a woman who was admitted to the Hospital with moderate pyrexia, and complaining of pain in the left side and headache; the two latter symptoms had existed three weeks. A fortnight later vomiting and delirium came on, shortly followed by unconsciousness with tetanic convulsions, and death.—See *Elizabeth Ward Book*, vol. ii, p. 144.

2034. A Cæcum, with its Appendix. The appendix is dilated and its walls are thickened. In the middle of its course there are two large ulcerated apertures penetrating its coats; which apertures, it is presumed, were the consequence of the lodgment of a gall-stone in its cavity. XVI. 65

From a man 38 years old. The gall-stone became lodged in the appendix nine days before death: it produced peritonitis, and complete obstruction of the intestines for four days before death.

Presented by H. Bateman, Esq.

2035. A Cæcum and Vermiform Appendix. The terminal portion of the appendix is perforated and sloughy; it was surrounded by a collection of pus. The communication with the cæcum is occluded by inflammation. The impacted concretion, if one existed, had escaped into the abscess cavity.

From a boy, aged 15 years, who was admitted to the Hospital with acute peritonitis, dying shortly after. Six days before he was seized with sudden pain in the abdomen, he vomited frequently, and the bowels were constipated.—See *Mark Ward Book*, vol. viii, p. 282.

2036. A dilated Appendix Vermiformis, which has no communication with the Cæcum. It was filled with gelatinous colloid-like material.

From a gentleman, who died from disseminated sarcoma.

SUBSTANCES DISCHARGED PER ANUM.

2037. Portions of Lymph and Mucus discharged from the intestines. XVI. 63

2038. Soft Substances discharged per anum. Some of them resemble pieces of membrane; others have a tubular form; and others resemble pieces of fat. XVI. 39

2039. A similar specimen. XVI. 44

INJURIES OF THE INTESTINES.

2040. Portion of an Ileum, exhibiting a complete transverse rupture of its coats. A thin shred alone connects its two portions. XVI. 51

The injury was the result of external violence in the same person as the ruptured Vena Cava, in Series IX, No. 1607; and the ruptured Bladder, in Series XXIX, No. 2441.

2041. Mesentery and portion of Small Intestine from a boy, aged 11 years, who fell between the side of a cart and its wheel, and was dragged along for some distance. He died from peritonitis, and on examination a rent of the mesentery was found, about three and a half inches in length. The coil of intestine corresponding to part of the rent in the mesentery was folded on itself, of a dark claret colour, sodden and œdematous, and united to the adjacent parts by bands of recent lymph. This portion of intestine looked as if dead; and it seemed doubtful whether its condition was due to altered blood-supply in consequence of the rent in the mesentery, or to direct injury. The sub-peritoneal tissue of the abdominal wall situated over the portion of intestine was infiltrated with blood.

EFFECTS OF POISONS.

2042. A Duodenum, exhibiting the effects of sulphuric acid. The mucous membrane is very dark with congested vessels and effused blood; it is, in some situations, corrugated; in others, completely destroyed. XVI. 45

From the same patient as No. 1940, in Series XVI.

2043. Portion of the Jejunum of a man, aged 29 years, who twelve hours before death had swallowed about three ounces of commercial nitric acid, the stomach being empty. The surface of the mucous membrane has lost the bright scarlet colour, which it had before immersion in spirit, but the corrugation of the membrane is well shown.

2044. Portion of large Intestine, from a patient who died fourteen hours after swallowing a large quantity of liquor ammoniæ. The mucous lining is of a deep crimson colour, and in places there are considerable portions which seem to be bared of epithelium, as after vesiccation. Some of the discoloration was due to the escape of altered blood into the sub-mucous tissue. There was an abundance of fluid blood in the alimentary canal. These conditions prevailed in, and from, the stomach to the upper part of the rectum.—See *St. Bartholomew's Hospital Reports*, vol. xvii, p. 301. XVI. 129

A drawing is preserved, No. 219.

SERIES XIX.

DISEASES OF THE RECTUM AND ANUS.

PROLAPSUS.

2045. A prolapsed Rectum. The mucous lining of the most dependent portion is much thickened, forming a great part of the fibro-cellular mass which protruded through the anus. A section has been made through the anterior wall, showing this thickened portion, in which numerous clots of blood are conspicuous, and denote the situation of dilated hæmorrhoidal veins. XVI. 119

ULCERATION.

2046. The Rectum of a girl 25 years old. Its mucous membrane is entirely removed by ulceration for several inches above the anus; and above the ulcerated part it is slightly thickened. The muscular and other coats of the intestine are thicker and denser than is natural, but exhibit no morbid alteration of their tissue. XVI. 64

Vide Nos. 2048, 2058, 2060.

SIMPLE STRICTURE AND CONTRACTION.

2047. Portion of a Rectum, the cavity of which, at its upper part, is contracted to a quarter of an inch in diameter, without any visible change of structure. The contraction includes about an inch of the length of the intestine: it was probably occasioned by the action of the muscular fibres. XVI. 31

2048. Portion of a Rectum, exhibiting a general thickening and induration of its coats, and a very close annular stricture between two and three inches from the anus. Above the stricture the intestine is dilated, and its muscular coat is thick and strong; below it, there is diffuse superficial ulceration of the mucous membrane. A portion of quill is passed through the contracted part. XVI. 32

2049. A Rectum, exhibiting a contraction of its cavity which commences two inches above the anus, and is thence continued four or five inches upwards. The coats of the intestine are generally thickened and indurated, and the divided edges exhibit white bands intersecting a very firm substance. The cellular and adipose tissue around the rectum is also thickened, and is converted into a hard brawny substance, in which the posterior surfaces of the uterus, vagina, and broad ligaments are involved. XVI. 33

2050. A Rectum, exhibiting a contraction of its canal which commences an inch above the anus and is continued five inches up the intestine. The coats of the intestine are generally thickened, and of very dense texture; the mucous membrane in some situations is tuberculated, and in others ulcerated. The cellular and adipose tissue around the intestine is indurated. A portion of the coats of the bladder has undergone the same change of structure as the coats of the rectum. XVI. 47

ABSCESS AND FISTULA.

2051. Portion of a Rectum, exhibiting a fistula, which extends from the anus upwards between the fibres of the levator ani muscle and the longitudinal muscular fibres of the intestine. A bristle is passed through the fistulous passage, which does not open into the rectum. XVI. 35

2052. Portion of a Rectum, with a Fistula extending for two inches upwards on its exterior, and then suddenly opening into its cavity. The passage is lined by a smooth membrane, like the mucous membrane of the rectum itself. XVI. 50

2053. Portion of a Rectum, with the Anus. Irregular and branched fistulous passages, the course of which is indicated by bristles, extend in various directions around the exterior of the rectum, but none of them open into it. They are lined by soft and smooth membrane. The mucous follicles of the intestine are much enlarged. XVI. 46

2054. A Rectum from a middle-aged woman. Its mucous membrane is completely removed by ulceration, to the extent of several inches above the anus. Abscesses, which formed in the cellular and adipose tissues around the lower part of the intestine, have burst into it by several openings; and all the adjacent tissues, as well as the coats of the rectum itself, are indurated and consolidated. XVI. 37

2055. A Rectum exhibiting the effects of long-continued inflammation in its coats and in the tissues around them. The whole of the mucous membrane, for about nine inches above the anus, is removed, an irregular shreddy surface being exposed. On this surface there are several apertures which lead to fistulous passages in the diseased tissues. Upon the anterior aspect of the rectum, there is one aperture higher up than the rest, which passes through the walls of the rectum, and which opened directly into the peritoneal cavity. Through this aperture a portion of glass is passed. All the tissues around the rectum are greatly thickened and indurated. XVI. 69

The patient, a middle-aged woman, had long suffered with symptoms of disease of the rectum, when peritonitis was excited by the formation of the aperture above described, and speedily proved fatal. The first sign of peritonitis occurred during the act of defecation.

Vide also Nos. 2058 and 2059.

RECTO-VESICAL FISTULA.

2056. Portions of a Rectum and Urinary Bladder, between which a wide communication is indicated by a piece of glass. The surface of the rectum, about eight inches from the anus, is extensively and deeply ulcerated; and at one part the ulceration has spread through the thickened and indurated tissue connecting the bladder and rectum so as to form the communication just mentioned. The mucous membrane around the orifice in the bladder is thickened and covered by soft lymph. XVI. 72

From a man, aged 85, who died with asthma. He had not complained of any affection of the rectum or bladder till a week before his death, when he first noticed that air occasionally passed through the urethra. During the last week of his life, both air and fæces passed with his urine; the latter chiefly in small masses about as large as peas.

Presented by Henry James, Esq.

2057. Portion of a Rectum. Its coats are generally and greatly thickened, indurated, and consolidated with each other, and with the surrounding parts. Just above the anus, there are numerous ulcerated apertures, with smooth edges, which lead through the walls of the rectum into short fistulous canals in the surrounding indurated tissue. One of the canals extends beyond this tissue through the coats of the bladder into its cavity. XVI. 34

Vide Nos. 2071 in this Series, and 2433 Series XXIX.

Recto-Vaginal Fistula, vide Nos. 2059.

SYPHILITIC DISEASE.

2058. The Rectum and adjacent portion of the Colon, laid open, showing syphilitic ulceration of the mucous membrane. The whole mucous membrane of the rectum is destroyed, except one small patch, which is thickened and opaque. The exposed submucous surface is uneven, tuberculated, and thickened by infiltration. On the mucous membrane of the colon, there are ulcers of regular round or oval shape, from one-sixth to about two-thirds of an inch in diameter, with clean, sharply-cut, scarcely thickened edges, surrounded by healthy, or only too vascular mucous membrane. Their bases are, for the most part, level, flat, or with low granulations resting on submucous tissue, nowhere penetrating to the muscular coats, with no marked subjacent thickening or hardening. On some of them, are ramifying blood-vessels; on some few there is, at the centre of the base, a small island of mucous membrane. At some places, two or more of these ulcers, extending and uniting, have coalesced into a large ulcer of irregular shape. By such coalescence, some of the ulcers in the lower part of the colon are continuous with the ulcerated surface of the rectum. No ulcers were found in the cæcum, nor in the small intestine, except one very small one of rather doubtful character, in the ileum.

From a woman, aged 28 years, who had contracted syphilis seven years previously. The case is reported by Sir J. Paget in the *Medical Times and Gazette*, March 18th, 1865.
The specimen is represented in the drawing, No. 261.

2059. A Rectum affected with syphilis. Towards the upper portion of the bowel, the mucous membrane is thrown into large rounded nodules and folds, and the submucous tissue is greatly thickened. From this point to the anus, the inner surface is covered by cicatricial tissue, perforated by very numerous apertures, and the bowel is here contracted. A glass rod is placed in a recto-vaginal fistula immediately above the external sphincter; other fistulæ are marked by portions of glass inserted within them.

From a woman, aged 27 years, who had had syphilitic disease of the rectum for about eighteen months.—See *Stanley Ward Book*, vol. vii, p. 185.

2060. The Rectum of a woman, aged 30 years, affected by what was supposed to be tertiary syphilitic ulceration.

2061. A portion of the large Intestine, from the same patient, showing the alternation of a healthy with a diseased tract of mucous membrane.

For history and account of Post Mortem Examination, see Sitwell Ward Book, vol. i, p. 103.

MORBID GROWTHS.

POLYPUS.

2062. Sections of a Polypus of the Rectum. It is an oval flattened mass, about two-thirds of an inch in its greatest diameter, and was attached by a very slender pedicle, nearly an inch long, to the anterior wall of the rectum, just above the margin of the sphincter. It protruded at the anus, covered with high-coloured mucous membrane, that was tinged with blood. Its texture was firm, greyish, very succulent; and it included a few small cavities full of clear yellowish, viscid fluid. In minute structure, it appeared, in every part, composed of disorderly clusters of small tubules, like those of the natural mucous membrane of the rectum. The clusters of glands were partitioned by small quantities of fibro-cellular tissue. XVI. 95

The patient was a boy 4 years old. The growth had been observed for six months.

2063. A large Polypus of the Rectum from a man aged 40 years. Symptoms had existed for ten years, and for two or three years the fæces had never passed without much straining, and occasionally discharge of blood. Before removal,

the polypus could be felt in the rectum nearly four inches from the anus, attached to the posterior wall of the bowel. When protruded by long straining, it appeared as an irregular spheroidal mass, lobed, moderately firm, but brittle, about two and a half inches in its chief diameter, red like the adjacent mucous membrane, readily but not freely bleeding. Its base of attachment seemed to be rather more than an inch in diameter. Under the microscope, the tumour was seen to be composed of small cells like gland cells, and a small quantity of fibro-cellular tissue. Numerous papillæ were found, with loops of capillaries in their interior, and covered with cylindrical epithelium. Upon a careful examination a short time after the removal of the tumour, no trace of it could be discovered.

Presented by Mr. Thomson.

2064. A Fibro-cellular Polypus, removed from the rectum of a gentleman about 40 years old.

Presented by Sir J. Paget.

2065. A Fibrous growth removed from the lower part of the Rectum. It is covered with a structure resembling mucous membrane, which, however, over portions, has the character of common integument, and long silken hairs grow from its surface. The growth is composed of fibrous tissue containing near the pedicle a small portion of bone with a medullary canal. XVI. 124

CANCER OF THE RECTUM AND ANUS.

2066. A portion of the commencement of the Rectum, showing a sudden contraction of the intestine, about half an inch long and the size of a quill. The mucous membrane above and below the stricture is slightly thickened. The intestine at the situation of the contraction is bent on itself at an acute angle and bound in that position by adhesions, which pass across the angle.

Mieroseopie examination showed tubules lined by eylindrieal epithelial eells eontained in a large amount of eonnective tissue (eylindrieal-cell eancer).

From a woman aged 37 years.—See *Post Mortem Book*, vol. viii, p. 14.

2067. Portion of a Rectum and of the Sigmoid Flexure of the Colon. There is an annular constriction at the point of junction of these two portions of the large intestine, and the canal is still further obstructed by the projection of a soft spongy medullary growth into its interior. The rectum itself appears healthy, but the colon is greatly dilated, and its walls much hypertrophied. XVI. 99

The patient, a middle-aged woman, died in the Hospital, after five weeks' suffering from complete obstruction of the intestinal canal. The cæcum gave way in several places before death, and peritonitis ensued, consequent on the escape of fæcal matter. The case is narrated in the *St. Bartholomew's Hospital Reports*, vol. v, p. 285.

2068. A Rectum, in which distinct masses of soft, spongy, medullary substance have grown from the mucous membrane for about three inches above the anus. Around these masses its coats are thickened and ulcerated. XVI. 42

2069. A Rectum and Urinary Bladder. Soft medullary tumours, arising from the mucous membrane of the rectum in its whole circumference, project into the cavity of the intestine, from the anus for about four inches upwards. The cellular tissue between the bladder and rectum is thickened and indurated.

XVI. 56

2070. Portion of a Rectum. At a distance of about three inches from the anus the greater part of the circumference of the intestine is occupied by a firm medullary tumour, growing from beneath its mucous membrane. The mucous membrane is healthy. The tissues around that part of the rectum which is occupied by the morbid structure are thickened and condensed. Some lymphatic

glands behind the rectum are enlarged and filled by a substance similar to that of which the tumour is composed. XVI. 68

The patient was a woman 40 years old. She died extremely emaciated, with medullary tumours in the liver and other parts. She had made no complaint leading to a suspicion of disease of the rectum.

2071. The lower part of a Rectum, with the Urinary Bladder and an enlarged Prostate Gland. The rectum is the seat of extensive medullary disease. Softening and disintegrating, it has made its way into the bladder, involving its mucous lining, and projecting into its interior soft fungous granulations. A free communication exists, as indicated by the director passed from the bladder into the rectum. The prostate is enlarged, chiefly upwards, in its lateral lobes, and the prostatic bar stretches across the neck of the bladder. XVI. 106

The disease was of two years' duration, and proved fatal by exhaustion, consequent upon repeated hæmorrhages.

Presented by Charles Mayo, Esq.

2072. An annular stricture of the Rectum, situated eight inches from the anus. The mucous membrane at the seat of the stricture is infiltrated with a new growth and ulcerated; the lower margin of the ulcer is raised and everted.

From a woman, aged 56 years, on whom the operation of colotomy was performed on the right side for the relief of intestinal obstruction, caused by the stricture. The patient died from peritonitis on the day following the operation.

2073. A Rectum, with a portion of the sigmoid flexure of the Colon. The rectum presents an annular contraction with thickening, induration, and superficial ulceration of its coats (? cancerous) in the line of its junction with the colon. The contraction of the rectum was so close and firm that a finger could not be passed through it. The colon is dilated and hypertrophied. Except at the annular contraction the rectum is healthy. XVI. 59

Vide No. 2080.

HÆMORRHOIDS: Enlargement of the Hæmorrhoidal Veins.

2074. A Rectum, around the lower part of which the veins, dilated into hæmorrhoidal tumours, have been filled with wax injected into the inferior mesenteric vein. XVI. 38

2075. Portion of a Rectum. At its lower border the mucous membrane is raised in folds and lobular tumours, by the hæmorrhoidal enlargement of the subjacent veins. XVI. 27

2076. Portion of a Rectum with Hæmorrhoids. The surfaces of the hæmorrhoids are formed partly by the mucous membrane of the rectum, and partly by the external integuments thickened and raised in irregular folds around the margin of the anus. XVI. 43

2077. A pyriform Clot of Blood, firm and dark, which was removed from a dilated portion of a hæmorrhoidal vein. XVI. 103

INJURIES OF, AND OPERATIONS UPON, THE RECTUM.

2078. Portion of a Rectum from a young person. A quill is passed through an aperture in the upper part of the intestine, where it is covered by peritoneum; the aperture was made by the end of a metallic clyster-pipe. XVI. 36

The contents of the clyster were injected into the peritoneal cavity, and produced fatal peritonitis.

2079. The Rectum, Uterus, and Vagina of a child 5 years old. Ten months

before the death of the child, in the endeavour to administer an enema, a clyster-pipe was forced through the adjacent walls of the rectum and vagina. At the part thus injured there is a small depression in the wall of the vagina, and a long, pale, and irregular cicatrix in that of the rectum. Near this cicatrix also there are traces of small healed ulcers of the mucous membrane of the rectum. Just below the cicatrix, at a distance of about an inch from the margin of the anus, the canal of the rectum is reduced to an eighth of an inch in diameter, and the adjacent tissues are indurated. Above this stricture the intestine is greatly dilated; below, it is of natural size. A portion of the large intestine is preserved in No. 1952. XVI. 93

EXCISION OF THE RECTUM.

2080. The lower end of a Rectum, with the anus and a portion of the posterior wall of the vagina, excised for epithelioma of the rectum, which extended three or four inches up the gut and involved the vagina.

From a woman aged 41 years. Symptoms of disease of the rectum had existed three months. She recovered from the operation.—See *Stanley Ward Book*, vol. viii, p. 117.

SERIES XX.

HERNIÆ OR PROTRUSIONS, AND OTHER DISPLACEMENTS OF THE INTESTINAL CANAL AND OMENTUM.

ANATOMY OF HERNIÆ IN GENERAL.

α. Of the Hernial Sac.

ORDINARY FORM OF SAC.

2081. Left Oblique Inguinal Hernia. Portions of the aponeurosis of the external oblique, and of the lower border of the internal oblique and transversalis muscles, are raised from their connections, to show the passage of the hernial sac through the internal inguinal ring. The coverings of the sac are displayed, and its cavity is opened. XVII. 5

Vide Nos. 2126 to 2129, 2132, 2142.

THICKENING OF BODY OF SAC.

2082. Oblique Inguinal Hernia. The sac and its coverings are thickened and indurated, and its internal surface is made rough by the deposit of lymph upon it. XVII. 35

Vide No. 2124.

THICKENING OF NECK OF SAC.

2083. The Sac of an old Inguinal Hernia. Its neck is surrounded by a very tough and firm ring of condensed fibrous tissue. The sac dilates suddenly immediately below the neck, and there is a pouching of its posterior portion which apparently extended upwards behind the neck.

From a man who died in the Hospital from renal disease. A month before his death the hernia slipped down, and was reduced only after long and rather forcible application of the taxis under chloroform.

The difficulty in reduction was evidently due to the dense fibrous ring around the neck of the sac, and doubtless the hernia tended to pass upwards and backwards into the pouch described.

Vide Nos. 2123 and 2126.

VARIETIES IN THE SHAPE, AND OTHER UNUSUAL CONDITIONS OF THE SAC.

Constricted or hour-glass Sac, *vide* No. 2123.

BILOCULAR SAC.

2084. Oblique Inguinal Hernia, from a female. The sac has enlarged within the inguinal canal, and has thence extended through the opening in the aponeurosis of the external oblique muscle, so that it presents a bilocular form, part of the sac being lodged within the inguinal canal, part in the labium, and the two parts being in communication by a narrow canal which passes through the external inguinal ring. The aponeurosis of the external oblique is reflected

from the part of the sac which lies in the inguinal canal, to show the internal oblique and transversalis muscles, which pass across its neck. XVII. 24

No. 124 is a cast from the subject of this Hernia.

IRREGULARLY POUCHED SAC.

2085. A very large Congenital Hernia. Its sac is divided, as if by a deep constriction from below upwards, into two portions, which communicate by a large oval aperture at the upper part. The anterior division of the sac is the larger; the posterior has the testicle at its inner and back part. XVII. 37

Vide Nos. 2083, 2153, 2156.

INCOMPLETE SAC.

2086. Inguinal Hernia, in which the cæcum has protruded into the scrotum. There is an incomplete peritoneal sac, to the posterior surface of which, near the neck, the intestine is adherent. XVII. 76

Vide No. 2153.
Absence of Hernia Sac, *vide* No. 2115.

TWO DISTINCT SACS.

2087. Inguinal Hernia. The sac, which is of large size, is divided into an anterior and posterior portion by a membranous partition, in the upper part of which there are several small apertures; a quill is passed through one of the larger of them. Except by these apertures, the posterior division of the sac has no communication with the anterior, or with the cavity of the abdomen. XVII. 6

It is probable that, that which is now the posterior division of the sac was at one time an ordinary hernial sac, the mouth of which was subsequently closed; that after this had occurred, another sac was protruded in front of the former one; and that the apertures of communication between them were formed by the gradual thinning and absorption of their adjacent walls.

2088. Inguinal Hernia. There are two distinct hernial sacs side by side, and closely united by their intermediate walls. Each sac has its separate orifice of communication with the abdomen; but the orifice of one is very small. The spermatic cord is behind both the hernial sacs. XVII. 57

Vide No. 2143.

CLOSED SAC.

2089. The remains of an Inguinal Hernia, after the closure and obliteration of the neck of the sac. The peritoneum presents a puckered appearance and a funnel-shaped depression in the situation where the mouth of the sac formerly existed. XVII. 9

The obliteration was the consequence of the long wearing of a truss.

2090. A similar specimen, with the depression of the peritoneum more strongly marked. XVII. 10

SLOUGHING OF THE SAC.

2091. Femoral Hernia, for the reduction of which herniotomy was performed. The sac has sloughed, and its remains are soft and black. The incision of the stricture has been carried from the anterior part of the sac directly upwards. The obturator artery, arising with the epigastric by a common trunk nearly half an inch long, descends on the outer side of the mouth of the sac. XVII. 25

2092. Femoral Hernia, in a male. The hernial sac and its contents have sloughed; their remains are a pulpy mass, in which no distinction of parts can be recognized. Three portions of small intestine were protruded into the hernial sac: a portion of straw is passed into each of their canals. XVII. 58

β. Of the Contents of the Hernial Sac.

THICKENING AND INDURATION OF THE OMENTUM.

2093. A large portion of Omentum, which was removed in the operation upon an inguinal hernia. It is in many parts thickened and indurated. XVII. 59

2094. A large portion of Omentum, which was removed in an operation for strangulated inguinal hernia. Its tissue is generally indurated; and it exhibits numerous apertures bounded by blood-vessels, which form in some parts a kind of irregular network. XVI. 49

The patient completely recovered.

2095. A large portion of Omentum, partially indurated, which was cut off in an operation for strangulated inguinal hernia. The narrow portion by which it is suspended was attached to a protruded piece of large intestine; the rest was unattached. XVII. 86

The patient, an elderly woman, recovered after the operation, so that it is impossible to say under what circumstances so large a portion of the omentum had become connected with the large intestine alone, and with it by only a narrow pedicle.
Vide No. 2125.

THE INTESTINE—EFFECTS OF STRANGULATION.

2096. Strangulated Femoral Hernia, upon which no operation was performed. The sac and its coverings are in great part removed. The portion of small intestine contained in the sac presents a black and mottled appearance, from the intense congestion of its vessels. The small calibre of the intestine below the strangulated part is strongly marked. XVII. 77

2097. A portion of an Ileum, showing a small dark pouch projecting from the intestinal wall, which was adherent to the sac of a femoral hernia.

From a man, aged 48 years, on whom herniotomy was performed in the Hospital. The hernia had been strangulated forty-eight hours, and had twice been returned by taxis, again reappearing. The patient died suddenly, forty-eight hours after the operation, apparently from exhaustion. The heart was affected with fatty degeneration.

2098. Strangulated Femoral Hernia, from a male. The contents of the sac are omentum and intestine. The sac is separated from the fascia propria, and opened. The epigastric artery is situated immediately above and to its outer side. XVII. 21

2099. Portion of Small Intestine, from an inguinal hernia, exhibiting the impression of the stricture upon its coats. XVII. 42

2100. Section of a portion of Small Intestine, which was strangulated in a femoral hernia, to show the sharp-edged fold of mucous membrane which projects into the canal of the strangulated portion, from the angle formed by the portions above and below it. XVII. 89

2101. Portion of Small Intestine from a femoral hernia, exhibiting the effects of strangulation. The intestine has been opened. Near its upper border the impression of the stricture is marked by the thickening and partial ulceration of its coats. The lower portion of the intestine, which was strangulated, is distinguished by its dark colour and pulpy texture. XVII. 44

2102. Portion of a Jejunum, which was strangulated in an umbilical hernia. In the situation of the stricture, the intestine is contracted, and immediately above this is a small round ulcerated aperture, into which a portion of glass is inserted. Recent lymph is deposited on the peritoneum around this aperture. XVII. 17

2103. Portion of Small Intestine, which was strangulated in the sac of a femoral

hernia. On one side the intestine exhibits but a slight indentation from the stricture; on its other side, which corresponded with Gimbernat's ligament, there is a large aperture in it, and its coats are very thin. XVII. 80

2104. Portion of Small Intestine, which was strangulated in a femoral hernia. Its coats have sloughed and given way at that part of its circumference which lay nearest to Gimbernat's ligament. XVII. 18

2105. A portion of Jejunum, of which a part of the circumference was strangulated in one of the crural canals. The strangulated portion has been drawn out like a short diverticulum from the rest of the intestine, and has a wide ulcerated aperture through its coats at the part which was nearest to Gimbernat's ligament. XVII. 85

2106. Portion of Small Intestine from a femoral hernia. Several openings have been formed in consequence of the sloughing of the part of the intestine which was inclosed in the stricture, and around these openings the coats of the intestine are very soft and readily separable. XVII. 43

2107. Portion of an Ileum, which was strangulated in an umbilical hernia. In the situation of the stricture the intestine is considerably contracted, and its coats have sloughed and given way in the greater part of its circumference. XVII. 16

2108. A portion of Small Intestine, with an elongated ragged aperture in its wall, where a well-marked constriction exists.

From a man, aged 49 years, who was admitted to the Hospital with a strangulated umbilical hernia. During the operation of herniotomy a narrow slough, more than one inch long, escaped from the opening described; no doubt it consisted of the portions of the mucous and muscular coats corresponding to the line of constriction.

2109. Femoral Hernia, containing a portion of gangrenous intestine. The mortified intestine, of a white colour and with lymph deposited on it, is in the centre of the sac. The upper and lower portions of intestine leading to the strangulated part are laid open; the upper portion is distinguishable by the thickness of its coats and the dilatation of its canal. XXII. 66

2110. Fluid removed from a portion of small intestine which was strangulated, and intensely congested and inflamed in a hernia. The fluid is pale yellowish, pellucid, thin, albuminous, not spontaneously coagulating. With the microscope, abundant leucocytes were found in it. This fluid is, probably, an example of what is produced in acute inflammation of the mucous membrane of the small intestine. The portion of inflamed intestine being, by the strangulation, shut off from communication with the rest of the canal, the fluid produced in it had scarcely any mixture of the ordinary intestinal contents. The quantity of it was so large, that it was necessary to puncture the distended part, in order to reduce the intestine. XVI. 102

Vide Nos. 2092, 2126.

UNUSUAL CONTENTS OF HERNIÆ.

2111. Large Inguinal Hernia. A portion of the sigmoid flexure of the colon, displaced from its natural situation by the dragging downwards of the peritoneal protrusion, is situated close by the mouth of the sac. From the appearance of the intestine, it is possible that the sigmoid flexure had constituted the contents of the sac. XVII. 32

2112. Femoral Hernia, of unusually large size. The contents of the sac are omentum, with part of the sigmoid flexure of the colon and a portion of small intestine. XVII. 41

2113. Part of the Uterus, with the left Inguinal Canal and other adjacent parts, from a woman on whom an operation was performed for what was supposed to be a strangulated hernia. Below and in front of the inguinal canal, at the upper part of the left labium, a sac, like that of a large tunica vaginalis testis, and having no communication with the abdomen, is laid open. This sac was filled with fluid; and the left ovary and the extremity of the Fallopian tube are fixed to its posterior wall, with portions of the lining membrane of the sac reflected over them. A bristle is passed into the orifice of the Fallopian tube; the ovary is ill-developed. XVII. 78

The patient was a woman between 30 and 40 years old. A fortnight after her delivery she had peritonitis, and gave such an account of the swelling produced by the sac in her groin, that it was supposed to be a hernia. The operation was performed, and she died three days afterwards.

The case may be regarded as one in which the ovary and Fallopian tube passed through the canal of Nück into the labium, and in which the communication between the peritoneal pouch and the general peritoneal cavity was closed.

2114. The Gall-bladder of a woman, aged 45, admitted into the Hospital with a femoral hernia on the right side. The sac was opened and its contents were returned. She died of peritonitis some days after. The gall-bladder was found close to the internal abdominal ring, and a decided constriction was visible some little distance above the fundus. A portion of the groove on the inner side was ulcerated. The constriction and ulceration are still visible. The liver did not present the ordinary form; it was elongated from above downwards (see Drawing No. 285) and drawn towards the ring. The post mortem examination afforded no evidence that any portion of intestine or other structure besides the gall-bladder had passed through the femoral ring. XVII. 96

A drawing is preserved, No. 285.

2115. Inguinal Hernia combined with Hydrocele of the tunica vaginalis testis. The hernia is situated behind the enlarged tunica vaginalis, which is laid open anteriorly, and is flattened by the pressure of the hernia. The hernia is opened posteriorly, and its contents, which are the cæcum and part of the colon, are there shown. The vessels of the spermatic cord are separated; the spermatic artery and the vas deferens pass together along the inner and posterior part of the hernia, and the spermatic veins are at some distance external to them. There is no true hernial sac. XVII. 12

Vide No. 2086.

OCCASIONAL RESULTS OF TAXIS.

RUPTURE OF INTESTINE.

2116. Portion of Small Intestine from the sac of a femoral hernia upon which an operation had been performed a few days before death. A considerable opening was found in the intestine apparently from laceration of its coats, and its edges were drawn together by sutures. Lymph is deposited upon the peritoneal surface of the intestine around the opening; and upon the mucous membrane, it is so abundantly deposited that the opening is completely closed by it. XVII. 73

REDUCTION *en masse*.

2117. Congenital Hernia, for the reduction of which herniotomy was performed. On the front of the preparation there is a sac formed by the continuation of the vaginal process of peritoneum into the scrotum. On the abdominal surface a portion of intestine and the testicle are seen lying in a sac formed by the unobliterated vaginal process, where it passes through the inguinal canal.

XVII. 56

It is probable that before the operation a part of the hernial sac had been pushed backwards

into the abdomen, and that during the operation the intestine was forced into this portion of the sac.

2118. Inguinal Hernia, for the reduction of which an operation was performed a short time before death. On one side of the preparation there is a portion of the spermatic cord, and, a little above it, is an opening, which, in the operation, was made into the inguinal canal. On the other side of the preparation is the hernial sac, extending downwards into the pelvis, by the side of the urinary bladder to which it is attached. In the upper part of the sac, is a circular orifice; this was the mouth of the sac, through which the intestine passed from the cavity of the abdomen. The other and larger opening in the sac was made in the examination of the parts after death. XVII. 68

It is probable that the hernial sac which now appears extending downwards into the pelvis, had originally been situated in the scrotum, and that, in the efforts to reduce the hernia, previous to the operation, both the sac and its contents had been pushed into the cavity of the abdomen. The intestine in the sac was found mortified from the tightness of the stricture, which was formed entirely by the peritoneum at the mouth of the sac; and it will be observed that, by the displacement of the sac, its mouth had become situated deep in the abdomen, at a great distance from the internal inguinal ring.

2119. Inguinal Hernia, for the reduction of which the operation was performed. The sac, opened from the front, is thickened and inflamed. Between the peritoneum and the fascia transversalis, immediately above the mouth of the sac, there is a large space formed by the separation of the cellular tissue in the endeavour to reduce the hernia. A portion of the intestine, which had been strangulated, was pushed from the hernial sac into this space, and remained in it strangulated. XVII. 40

IRREDUCIBILITY FROM ADHESION OF THE CONTENTS TO EACH OTHER, OR TO THE HERNIAL SAC.

2120. Inguinal Hernia, combined with Hydrocele. Several folds of intestine are firmly adherent to each other and to the hernial sac. The enlarged tunica vaginalis testis is situated in front of, and nearly envelopes, the sac of the hernia. Bristles are passed beneath the spermatic vessels, which are placed at some distance from each other behind the tunica vaginalis. XVII. 39

2121. Inguinal Hernia. A portion of small intestine has become extensively and firmly united to the sac immediately below the external abdominal ring. The surface of the intestine is covered by recent lymph. XVII. 13

Vide Nos. 2122, 2155.

A RING FORMED BY ADHERENT OMENTUM.

2122. Inguinal Hernia. A portion of omentum has become adherent to the inside of the sac, in two situations, so as to form an aperture or ring, through which the intestine was protruded. A portion of glass is passed through the mouth of the sac and the ring formed by the omentum and the wall of the sac. XVII. 65

ANATOMY OF PARTICULAR FORMS OF HERNIA.

INGUINAL HERNIA.

THE SAC.

2123. The Sac of an Inguinal Hernia, presenting an annular contraction produced by thickening and induration of a narrow portion of the peritoneum, probably corresponding to the neck of the sac. XVII. 88

2124. The Sac of an Inguinal Hernia, slightly thickened and indurated. XVII. 47

COVERINGS OF THE SAC.

2125. Dissection of a right oblique Inguinal Hernia. The cremasteric fascia, infundibuliform or fascia transversalis, and the sub-peritoneal tissue are dissected up and reflected from a portion of the sac. The sac is filled by a mass of indurated omentum, which was connected with the great omentum by a narrow pedicle; there were no adhesions to the sac, but the hernia was irreducible. The internal and external abdominal rings are approximated.

From a man, aged 42 years, who was admitted to the Hospital in a dying condition.

Post Mortem:—A portion of gangrenous intestine was found lying near the right inguinal canal.

A hernia, to which he had been subject for six years, became strangulated six days before his admission. After repeated trials he himself succeeded in returning something on the third day, and his symptoms were relieved.—See *Pitcairn Ward Book*, vol. vi, p. 207.

OBLIQUE INGUINAL HERNIA.

Incomplete.

2126. Incomplete Inguinal Hernia, containing strangulated intestine. The aponeurosis of the external oblique muscle is divided and turned upwards. The sac, containing a small portion of strangulated intestine, is opened from the front. The lower border of the internal oblique and transversalis muscles crosses over the neck of the sac. Two bristles are passed between the mouth of the sac, where the thickened peritoneum constitutes the stricture, and the strangulated intestine. Another bristle is passed beneath the epigastric vessels. XVII. 11

Vide No. 2166.

Complete Oblique Inguinal Hernia.

2127. A left Oblique Inguinal Hernia, the sac of which has just passed through the opening in the aponeurosis of the external oblique muscle. The several coverings of the sac are displayed, and its cavity is laid open from the side. A bristle is passed beneath the epigastric artery, where it passes on the inner margin of the internal ring. XVII. 4

2128. Oblique Inguinal Hernia on the left side, showing the injected epigastric artery passing round the inner side of the mouth of the sac. The sac is laid open and separated from its immediate coverings. The obturator artery arises by a common trunk with the epigastric. XVII. 45

2129. Oblique Inguinal Hernia, dissected to show the change in the relative position of the external and internal inguinal rings, in consequence of oblique hernia of long standing. The internal abdominal ring is drawn down and nearly opposite to the external ring. XVII. 71

Vide Nos. 2081 to 2084, 2121, 2130, 2132, 2135.

DIRECT INGUINAL HERNIA.

2130. Two Inguinal Herniæ, one direct, the other oblique. On the right side the hernia is oblique and has descended into the scrotum. The epigastric artery is close to the inner margin of the mouth of its sac, and the spermatic cord is behind the sac. On the left side the hernia is direct, having passed from the abdomen directly through the external inguinal ring. The epigastric artery is near the outer margin of the mouth of its sac; and the spermatic cord is between the sac and the outer column of the external ring. The sac of this hernia is withdrawn from the covering of the fascia transversalis, which was protruded before it, and is inverted towards the abdominal cavity. XVII. 29

Vide No. 2152.

UNUSUAL CONDITIONS ASSOCIATED WITH INGUINAL HERNIA.

MALPOSITION OF TESTIS.

2131. Inguinal Hernia. The testicle has not passed through the inguinal ring; it was found within the canal, and is connected with the upper part of the hernial sac. The testicle is smaller than natural, but its structure is healthy. The lower part of the epididymis is removed from the body of the testicle, and passes down the posterior part of the hernial sac. The vas deferens also passes along the same part, and, becoming small and very tortuous, reaches nearly as far as the end of the epididymis just described. A loop of black silk is placed between these two portions of what may be regarded as an unravelled epididymis. XVII. 1

Vide Nos. 2136, 2166.

SEPARATION OF CONSTITUENTS OF CORD.

2132. Inguinal Hernia, exhibiting the separation and displacement of the vessels of the Spermatic Cord. The spermatic artery and the vas deferens are situated close together on the inner and posterior part of the sac; the spermatic veins are nearly an inch distant from them. Large fasciculi of the cremaster muscle are interlaced over the front of the hernial sac. XVII. 14

Vide No. 2115.

COMPLICATED WITH HYDROCELE.

2133. Inguinal Hernia combined with Hydrocele. The enlarged tunica vaginalis is situated in front of the hernia; the testicle is at its lower part. The hernial sac is large; it communicated with the abdomen by a wide orifice, and there is a portion of omentum adherent to its lower part. There are some adhesions between the two surfaces of the tunica vaginalis. XVII. 59

Vide Nos. 2115, 2120.

2134. Inguinal Hernia combined with Hydrocele of the tunica vaginalis testis. The hernial sac extends downwards to a short distance behind the upper part of the distended tunica vaginalis. XVII. 15

WITH HYDROCELE AND HYDROCELE OF CORD.

2135. Inguinal Hernia, combined with Hydrocele of the tunica vaginalis testis, and hydrocele of the spermatic cord immediately above the testicle. The hernial sac is situated above the hydroceles; its coverings are very thick. XVII. 3

HERNIA INTO THE VAGINAL PROCESS OF THE PERITONEUM.

CONGENITAL HERNIA.

2136. Part of the right Innominate Bone with Poupart's Ligament, and part of the abdominal wall. Just above and parallel with Poupart's ligament is an incision through the aponeurosis of the external oblique made in the operation of herniotomy. Protruding through the incision and occupying the patent canal of the vaginal process of peritoneum is an undescended ill-developed testicle, and on its outer side a knuckle of intestine, which has been inserted to show the position occupied by the strangulated gut. The extremity of the vaginal process protrudes from the external ring.

From a boy, aged 12 years, who was operated on for a hernia into the vaginal process of peritoneum (congenital hernia). The testicle on that side had remained in the inguinal canal, but a hernia had never before descended. The intestine had been strangulated nearly three days before the operation was performed. Death resulted from peritonitis.—See *Colston Ward Book*, vol. vi, p. 40.

2137. The left Testicle and Vaginal Process taken from the same patient as the preceding specimen. The testicle had descended into the scrotum, but the vaginal process is patent: a rod of glass is inserted into it.

2138. Congenital Hernia, from an adult. The roll of paper is passed through the inguinal canal into the cavity of the tunica vaginalis testis, in the place formerly occupied by the protruded intestine. XVII. 7

Dissected by Percival Pott, Esq.

2139. Congenital Hernia from an adult, for the relief of which herniotomy was performed. The testicle and the hernial sac are situated within the inguinal canal. The upper border of the mouth of the sac was divided. XVII. 38

2140. Large Congenital Hernia. In consequence of the yielding of the tunica vaginalis at its lower part, the testicle is situated in the centre of the posterior wall of the sac. XVII. 81

Vide No. 2085.

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UNUSUAL RELATION OF ARTERIES TO THE NECK OF INGUINAL HERNIÆ.

2141. Parts of an Ileum and Os Pubis, with Poupart's Ligament, and a portion of the Abdominal Walls, including the Inguinal Canal. The external iliac artery and its branches are injected. The epigastric and obturator arteries arise by a common trunk half an inch long. A small branch arising from the epigastric, about a quarter of an inch from its origin, passes across the external ring. XVII. 83

This branch was wounded in an operation for strangulated hernia in an elderly man; profuse hæmorrhage, which commenced five hours after the operation, was the result, and the patient died with peritonitis.

FEMORAL HERNIA.

ORDINARY CHARACTERS.

2142. Femoral Hernia, in a male, dissected so as to display the peculiar form of the tumour. XVII. 48

Vide Nos. 2091, 2144, 2145, 2146, 2152.

TWO DISTINCT SACS.

2143. Femoral Hernia. In the peritoneum covering the femoral ring there are the orifices of two distinct hernial sacs close together. The outermost of these sacs extends beneath the semilunar edge of the fascia lata, and over the femoral vessels. The inner sac is so small that it does not protrude beyond Poupart's ligament. XVII. 75

COVERINGS OF SAC.

2144. Femoral Hernia of recent occurrence. On the front of the preparation the sub-peritoneal fat is laid open; it is crossed above by the semilunar edge of the fascia lata. At the back, the hernial sac is separated from it, withdrawn from beneath the crural arch, and inverted towards the abdominal cavity. XVII. 22

2145. The parts concerned in Femoral Hernia. The peritoneum and hernial sac have been removed to show the protrusion of the sub-peritoneal fat in the form of a pouch just below Hey's ligament. XVII. 23

2146. Femoral Hernia. The coverings of the sac are displayed. Within the latter, the sac itself is shown, with lymph on its internal surface. The mouth of the sac is about a quarter of an inch in diameter. The epigastric vessels are situated three-quarters of an inch from the outer border of the mouth of the sac. XVII. 28

UNUSUAL RELATIONS OF OBTURATOR ARTERY.

2147. Two Femoral Herniæ, in the male, exhibiting different relations of the obturator artery to the mouth of the hernial sac. Both the obturator arteries arise by common trunks with the epigastric arteries. On the right side, the obturator artery descends to the obturator foramen close to the outer margin of the mouth of the sac. On the left side, the obturator artery in its course to the obturator foramen turns round the inner border of the mouth of the sac. On the right side, the common trunk of the two arteries is about a quarter of an inch long; on the left, it is about three-quarters of an inch long. XVII. 55

2148. Portion of a male Pelvis, with parts of the abdominal muscles, exhibiting the sacs of two femoral herniæ. On each side, the obturator artery, arising with the epigastric by a common trunk about half an inch long, turns round the inner border of the sac, while the obturator vein, arising separately from the epigastric, passes round the outer border. XVII. 69

PROTRUSION THROUGH GIMBERNAT'S LIGAMENT.

2149. Femoral Hernia. A small peritoneal sac has been protruded between the fibres of Gimbernat's ligament. A bristle is passed beneath the portion of the ligament which intervenes between this peritoneal sac and the space through which a femoral hernia usually passes. XVII. 52

HERNIOTOMY.

2150. Femoral Hernia, for the reduction of which the operation was performed. The sac is collapsed and thickened. The incision of the stricture has been carried from the anterior part of the sac directly upwards. The epigastric vessels are situated about half an inch from the outer side of the mouth of the sac. XVII. 27

2151. Femoral Hernia, for the reduction of which the operation was performed. Gimbernat's ligament is divided horizontally close to the os pubis. XVII. 51

MULTIPLE HERNIÆ.

2152. Four Herniæ, an inguinal and a femoral on each side. The spermatic cords are situated on the outer side of each inguinal hernia. The fascia transversalis, protruded before the right inguinal hernia, is divided and in part separated from the sac. XVII. 31

UMBILICAL HERNIA.

2153. Part of a large Umbilical Hernia, the sac of which presents many irregular pouches, and appears in some parts deficient. XVII. 33

2154. Portion of the Abdominal Muscles, exhibiting a large circular opening in the linea alba, through which an umbilical hernia was protruded. XVII. 34

2155. Section of an Umbilical Hernia, containing omentum firmly adherent to the sac. The sac, although thinned at one part, is complete. XVII. 46

2156. Portion of the anterior wall of an Abdomen, exhibiting a large Umbilical Hernia. The hernial sac is divided, by deep constrictions, into three parts of unequal size. It is filled by omentum. XVII. 82

VENTRAL HERNIA.

2157. A Ventral Hernia through the linea alba, midway between the ensiform cartilage and the umbilicus. The hernial sac was empty; it communicates with the abdomen by a small aperture into which a piece of glass is inserted. A portion of omentum, which passed from the transverse colon, is attached to the

left side of the aperture, but was not protruded into the sac. The divided extremity of the round ligament of the liver is attached to the opposite side.

The specimen was taken from a male subject in the dissecting room.

2158. Two Herniæ in the linea alba, above the umbilicus. The superior and larger sac contains omentum; the lower one is empty. Below the smaller sac is an aperture in the linea alba, through which fat protrudes. XVII. 36

2159. Ventral Hernia, protruding through the linea alba above the umbilicus.

OBTURATOR HERNIA.

2160. Portion of the front and right side of a Pelvis, exhibiting the sac of a small hernia through the obturator foramen. The sac is protruded above the upper edge of the obturator externus muscle, and below the obturator nerve. The vas deferens runs round the upper and outer border of the neck of the sac. XVII. 84

From a young man who died with pulmonary phthisis.

2161. A Portion of the left side of the Pelvis, showing a part of the ilcum, enveloped by omentum, protruded with its peritoneal sac beneath the obturator externus, lying between the muscle and the obturator fascia. The obturator artery and nerve lie immediately above the hernial sac; the artery being towards its inner, and the nerve towards its outer side. The intestine was closely adherent to its peritoneal sac. XVII. 90

From a woman, aged 47, who laboured under constipation of three weeks' duration, with its ordinary consequences, amongst which were frequent vomitings of fluid having a strong fæcal odour. There existed an omental hernia, protruded beneath Poupart's ligament into the thigh, where the omentum had become fixed by adhesions to the peritoneal sac protruded with it. Upon this omental hernia an operation was performed, and the protruded omentum put back into the abdomen. From this period the symptoms abated, but without any action of the bowels having been obtained. Subsequently, however, the symptoms returned with increased severity, and the patient sank three weeks from the commencement of the constipation.

The case is related by Mr. Stanley in the *Transactions of the Pathological Society of London*, vol. iii, p. 94.

DIAPHRAGMATIC HERNIA.

2162. Diaphragmatic Hernia. The preparation exhibits a portion of the left lateral half of the diaphragm, in which there is a large oval opening, presumed to have existed from birth. Through this opening, parts of the arch of the colon, omentum, and pancreas protruded into the thorax. The strangulation of the intestine by the margin of the opening was the cause of death. XVII. 70

The patient, a lad 19 years old, died with complete obstruction of the intestines of three days' duration.

Presented by Dr. Norris.

2163. Pericardial Diaphragmatic Hernia of the Omentum. The specimen was taken from the body of a man, aged 50, who was admitted into the Hospital on account of stricture of the urethra. He died apparently from exhaustion, the result of pyelitis, ten days after admission. At the post mortem examination, on opening the pericardium, a very remarkable condition presented itself. At the first glance it seemed as if the heart were thickly covered by inflammatory lymph, but a moment's further investigation showed the appearance to be due, not to lymph, but to a large piece of the great omentum, about the size of the outstretched hand and fingers, which lay spread out uniformly over the front and sides of the heart, so as almost completely to hide it from view. The omentum is not in the least altered in structure. There were no signs of thickening from inflammation or any other cause, and there

was no adhesion between it and the surface of the heart, or the parietal pericardium; neither the surface of the heart nor the inner surface of the parietal pericardium are altered in any way from their normal characters. The omentum has entered the pericardium through an aperture in its floor, which will readily admit the tip of the little finger, and is adherent to the edge of the opening. In the skin over the cardiac region a transverse linear scar, nearly an inch in length, was found, a couple of inches below and about the same distance to the right of the nipple; and corresponding to the position of this scar, the structures occupying the spaces between the fifth and sixth ribs were found thinned and depressed. At the same spot a piece of the cartilage of the fifth rib lay partly separated from its former connections. All the parts had, however, long healed; the wound, probably a stab, having been almost certainly inflicted many months or years before death.

The hernia was doubtless in consequence of a wound of the floor of the pericardium, inflicted at the same time as the wound in the chest-wall. The past history, however, of the patient is unfortunately a complete blank, as he had no relatives in this country at the time of his death. No other of the thoracic or abdominal viscera besides the urinary, were found diseased. There were, however, indications of old disease of the spine.

The heart had been examined during life on more than one occasion, by the House Surgeon, but no abnormal condition was detected. For a fuller report of the case by Mr. Morrant Baker, see *Transactions of the Pathological Society*, vol. xxviii, 1877.

2163a. Diaphragmatic Hernia, the consequence of a stab through the diaphragm six months before death. Through the aperture in the diaphragm a large portion of the jejunum and ileum, and a part of the arch of the colon, have been protruded.

The patient was a man thirty-one years old. He was always healthy until he stabbed himself below the left nipple. The wound was not considered dangerous; but he had subsequently several severe attacks of obstruction of the intestines, the last of which was fatal.

INTERNAL STRANGULATION.

BY FIBROUS BANDS AND ADHESIONS.

2164. A Portion of the lower part of an Ileum, and the Uterus; the intestine is distended with plaster of Paris. A broad band of adhesion is attached on one side to the fundus of the uterus, and on the other by two diverging bands to two portions of intestine, which if unfolded would be at least one and half inches apart. The adhesion is, therefore, Y-shaped, the two branches being attached to points of the intestine normally at a considerable distance from each other. When the intestine became distended, it resulted that the portion intervening between the two parts of the intestine tied together was bulged out, and a constriction was produced by the pressure and sudden curvature of the intestine against the upper branch of the adhesion. There are numerous adhesions between the uterus, rectum, and ovaries.

From a woman, aged 34 years, who was admitted to the Hospital with intestinal obstruction. Five days previously, her bowels were freely open after taking a purgative; the following day she was attacked with severe pain in the abdomen, and vomiting. She survived the obstruction nineteen days, but at no time complained of severe pain or tenderness at any part of the abdomen. About one year and a half before, she was in the Hospital with pelvic cellulitis.—See *Elizabeth Ward Book*, vol. vii, p. 406; and *Post Mortem Book*, vol. viii, p. 48.

2165. Part of the Small Intestines of a child strangulated by a band of adhesion, which is connected at both its extremities with the mesentery. Bristles are passed behind the band. The whole of the intestine below the constriction is strangulated, and its vessels are greatly congested. The mesenteric glands are enlarged.

The child was 7 years old. The obstruction had probably existed fourteen days before death.

2166. Inguinal Hernia. A portion of small intestine was found just behind the external inguinal ring strangulated by a band of adhesion extending from the peritoneum near the ring to the mesentery. The testicle is situated within the upper opening of the inguinal canal: it is smaller than natural, and on section presents a granular appearance. The epididymis is not connected with the body of the testicle, but proceeds at once from its upper part, forming a short mass of fine convoluted tube behind the peritoneum, and then becoming gradually larger and less tortuous, assumes the ordinary characters of the vas deferens. XVII. 2

Both this and Specimen No. 2131, are described by Mr. Lawrence, in his *Treatise on Ruptures*. London, 1824, 8vo., p. 243.

BY DIVERTICULA OR FIBROUS BANDS, THE REMAINS OF THE OMPHALO-MESARAIC DUCT.

2167. Portion of Small Intestine, from which a Diverticulum is continued. The extremity of the diverticulum is adherent to the contiguous part of the mesentery, so as to form a circular aperture, or ring. Through this aperture a portion of intestine twelve inches long passed and became strangulated. XVII. 53

The patient, a lad subject to constipation, died four days after the commencement of the signs of strangulation of the intestine.

Presented by E. P. Pridham, Esq.

2168. A Diverticulum arising from the Ileum at about fifteen inches from its termination in the cæcum, and attached at its blind extremity by a ligamentous cord to the umbilicus. The portion of ileum between the origin of this appendage and the cæcum had become twisted and entangled about it, causing strangulation, which terminated fatally in thirty-six hours. XVII. 92

From a boy aged 12 years.—See *Edinburgh Medical and Surgical Journal* for October, 1830.

2169. A Diverticulum from the Ileum, continued as a fibrous cord, the end of which is attached to a portion of mesentery close to the intestine. A loop of intestine has been rotated on itself, so that the diverticulum and fibrous cord are tightly twisted around it. XVII. 94

2170. Portion of small Intestine, the canal of which is completely constricted by a band of fibrous tissue, passing from the abdominal wall. XVI. 107

2171. The lower portion of an Ileum and the Cæcum. A large ragged perforation of the small intestine is seen. The intestine at this point was constricted; above the constriction it is dilated and its wall thickened; below it is slightly contracted. Immediately below the perforation, a thin fibrous cord is attached to the free border of the intestine by which the strangulation was produced. Its other attachment was not noted during the operation; but the position and appearance of the cord indicate that it is probably the remains of the omphalo-mesaraic duct. The surface of the intestine in the neighbourhood of the perforation is covered by lymph.

From a boy, aged 14 years, who was seized one night with violent pain in the abdomen, rigors, and vomiting. He was admitted to the Hospital with symptoms of strangulation, no indication of the cause of which was evident on examination. Laparotomy was performed on the seventh day after the onset of the symptoms. The lower portion of the ileum was found constricted by a band, on division of which the perforation was discovered. The margins of the perforation were attached to the wound. The patient did not rally from the operation. It was ascertained that he had had a severe attack of abdominal pain with constipation six months before.—See *Matthew Ward Book*, 1879.

2172. Portion of the Ileum showing a constriction just below the attachment of

the obliterated omphalo-mesaraic duct, by which the intestine had evidently been strangulated. XVII. 20

2173. Portion of Small Intestine, around which the persistent remains of the omphalo-mesaraic duct has become twisted. The cord appears to be separated into two portions; one of which twice encircles the intestine, and completely strangulates it. The other end of the cord was adherent to the femoral ring. XVII. 79

The patient, a middle-aged woman, had complete obstruction of the bowels for the last seven days of her life.

2174. Portion of Large Intestine strangulated by the pressure upon its walls of a band of fibrous tissue, laden with fat.

From the collection of J. R. Farre, Esq., M.D.

2175. Portion of Small Intestine and of a Cæcum from a boy, aged 15 years, who died of ilius. The small intestines are greatly dilated down to within two feet of the ileo-cæcal valve, where the bowel is suddenly narrowed so as to form a ring, which will just admit the tip of the little finger. At this obstruction there is no thickening of the peritoneum; the mucous and muscular coats are completely destroyed by ulceration for a breadth of a quarter of an inch at the narrowed part. Immediately below the constriction (between it and the valve) is a diverticulum about four inches long, the tip of which was adherent to the abdominal wall about two inches below the navel. The calibre of the diverticulum is equal to that of a swan quill.—See *Post Mortem Book*, vol. ii, January 18, 1872.

The intestine was probably constricted by the diverticulum.

THROUGH APERTURES IN THE MESENTERY OR OMENTUM.

2176. A portion of Mesentery, having in it a circular aperture, through which a portion of small intestine became strangulated. XVII. 99

From a woman, aged 56 years, who, two days after the removal of her breast for cancer, was attacked with diarrhœa, followed by peritonitis and death.

2177. Coils of Small Intestine. One of these having slipped through an aperture in the omentum, the gut was constricted and strangulated by the margins of the opening. In the upper part of the preparation the intestine retains its natural appearance; in the lower it is of a dark, in the recent condition almost black colour, its walls thickened and œdematous, in fact bordering upon a state of gangrene. Over portions of the serous surface lymph has been effused, most abundantly about the seat of stricture. XVII. 93

The man from whose body these parts were removed was straining violently when he fancied that something gave way within his abdomen. Suddenly, local pain ensued, rapidly becoming intense, then general peritonitis. On the fourth day he was brought to the Hospital. A few hours after his admission he sank and died.

APERTURE IN OMENTUM.

2178. Portion of an Omentum, in which, by the adhesion of two adjacent points of its surface, an aperture or ring is formed, through which the finger might be passed. XVI. 92

FOREIGN BODIES IN PROTRUDED INTESTINE.

2179. A portion of Small Intestine. Near its free margin are two ragged openings through which a bristle is passed.

From a man, aged 45 years, who died under the following circumstances:—A femoral hernia, which, though of long standing, had always been reducible, became strangulated. Its reduction was attempted, but unsuccessfully, both by the patient and by the surgeon. He was then brought into the Hospital, where a further moderate attempt was made with the taxis: but this also failed. In the performance of the usual operation and when, after opening the sac,

the gut had been returned, a piece of bone, was discovered behind and external to the sac. This, on being removed, proved to be part of the rib of a rabbit. The patient died of peritonitis. On dissection the two openings in the intestine were observed, and also a perforation of the posterior wall of the sac. It is probable that the bone lodged in the protruded intestine and prevented its reduction.—See *St. Bartholomew's Hospital Reports*, vol. iv, p. 261.

INTUSSUSCEPTION.

OF THE ILEUM INTO THE CÆCUM.

2180. Intussusception of the Small Intestine of a child. The lower portion of the intestine is laid open, and the inverted upper portion is shown ensheathed in it. XVII. 60

2181. Intussusception at three adjacent portions of the Intestinal Canal. 129

From the collection of J. R. Farre, Esq., M.D.

2182. Portion of Ileum inverted into the cavity of the adjoining Cæcum. Between the serous layers is a band of mesentery carried down with the portion of inverted ileum, and to its tense condition is due the curved direction of the central canal. The inverted layer of mucous membrane is thickened, especially where it curves round to be continued up the central tube. XVII. 91

2183. Intussusception of a large portion of the Ileum, and of the Appendix Cæci, within the Cæcum and ascending Colon. There is a diverticulum ilei which has passed into the colon with the intussuscepted ileum, but has become inverted, and has passed back again into the ileum, thus producing a double intussusception, of the ileum within the colon and of the diverticulum within the ileum. At the upper part of the preparation is the cæcum with the commencement of the intussusception and the inverted diverticulum ilei; at the lower part is the whole of the intussuscepted ileum, which was of a dark-brown colour, its vessels being distended with blood. XVII. 61

The patient was a man, 36 years old, who for six months before his death had often suffered pain in the abdomen. He died with peritonitis and obstruction of the intestines.

OF THE ILEUM AND CÆCUM INTO THE COLON.

2184. Intussusception, in which a considerable portion of the Ileum with the Cæcum and its Appendix, have been inverted into the cavity of the ascending colon. XVII. 62

2185. Intussusception from a child. The cæcum and a portion of the ileum are inverted and protruded into the colon. Lymph is deposited on the protruded portion of the intestine. XVII. 72

The intussusception was fatal by its obstruction to the passage of the intestinal contents.

Presented by H. Bateman, Esq.

OF THE LARGE INTESTINE.

2186. Intussusception. The cæcum and right lumbar portion of the colon are inverted and protruded into the arch of the colon, which is laid open to show the intussuscepted intestine projecting into its cavity. A piece of glass is introduced into the orifice of the intussuscepted intestine, which in some degree retains the dark colour it presented in the recent state.

From a child, 2 years old, who died after a few days' illness, in consequence of the obstruction in the alimentary canal.

Presented by William Radnor, Esq.

2187. Large Intestine of a boy, aged three and a half years. The cæcum, ascending and part of the transverse colon are invaginated into the lower half

of the large intestine, so that during life two inches and a half of the inverted cæcum protruded through the anus. The external aperture is transverse, and situated at the middle of the anterior aspect of the protruded portion, which is formed by the lower end of the ileum, at its junction with the cæcum. XVII. 95

The child had suffered for eight months with alternate diarrhœa and constipation. The prolapsus of the bowel was first noticed four months before death.

2188. The Large Intestine of an infant. An intussusception of the upper part of the colon into the sigmoid flexure, and thence into the rectum, had proceeded until the appendix cæci protruded at the anus. The stomach had been drawn, by means of its connection with the transverse colon, into a vertical position. XVII. 87

Presented by Henry Taynton, Esq.

SEPARATION OF INTUSSUSCEPTED INTESTINE.

2189. Portion of Small Intestine, nearly three feet long, which was discharged in a gangrenous state from the anus. XVII. 63

2190. The Cæcum, and a portion of the Ileum connected with it, from the same person as the preceding specimen. The cæcum is opened to show the condition of its mucous membrane, which is extensively ulcerated, and portions of which hang in shreds in the cavity of the intestine. A straw is passed from the cæcum through the ileo-cæcal valve. The ileum is opened to show the adhesion of its severed extremity to the cæcum, and the continuity of their mucous membrane. XVII. 64

The patient was a woman, 48 years old, subject to constipation. Seventeen days before the discharge of the portion of intestine in No. 2189, she was seized with signs of internal strangulation, which continued for six days, and then abated. Subsequent to the discharge of the intestine, which took place eleven days after the partial cessation of the intestinal obstruction, the patient had fæcal evacuations, but she died exhausted ten days after the discharge.

There had doubtless been an intussusception of the ileum into the cæcum and colon, and the ensheathed portion had sloughed off after it had become adherent at the point of inversion to the portion in which it was ensheathed.

Presented by William Radnor, Esq.

2191. A portion of Cæcum, with the adjoining parts of the Small Intestine, removed from a child whose abdomen was opened during life for intussusception.

A large piece of small intestine had passed through the ileo-cæcal valve, and it was found impossible to return it, the large intestine having already sloughed at some points and being ruptured in the attempt to return the strangulated (intussuscepted) small intestine. The portion of the intestine which forms the specimen was accordingly cut out. The ruptured portion of large intestine was stitched up with fine carbolised cat-gut, and the adjacent cut ends of large and small intestines were similarly sewn together. The patient survived the operation eight hours.—See *Lucas Ward Book*, vol. iv, p. 353.

INTUSSUSCEPTION IN ANIMALS.

2192. Intussusception of the Intestine of a Dog.

SERIES XXI.

DISEASES AND INJURIES OF THE LIVER.

THICKENING OF THE SEROUS LINING.

2193. Portion of a Liver enveloped by a thick layer of substance resembling fibro-cartilage, which is but slightly adherent to its surface, and probably consists of the thickened and indurated peritoneal coat. The surface of the liver, exposed by the reflection of a portion of the layer, appears healthy and smoothly covered by its fibrous coat. XVIII. 5

FATTY DEGENERATION.

2193a. A Section of a Liver affected with Fatty Degeneration. It is pale, smooth, and mottled of a yellowish white colour, owing to the infiltration of the cells at the periphery of the lobules with fat.

Vide No. 3220, Series L.

AMYLOID DEGENERATION.

2194. Section of a Liver which has undergone amyloid, lardaceous, or waxy change. The organ was greatly increased in size and weight. Its tissue was firm, compact, and waxy-looking. XVIII. 35

ABSCESS.

2195. Portion of a Liver, in which a large circumscribed Abscess, situated near its convex surface, opened by an irregular orifice through the diaphragm and the adjacent portion of the adherent lung into one of the bronchial tubes. The surfaces of both the lung and the liver are covered by thick tough layers of false membrane. XVIII. 34

Presented by Dr. Hue.

2196. Portion of a Liver containing a large abscess with ragged walls, surrounded by condensed hepatic tissue. 151

From the collection of J. R. Farre, Esq., M.D.

2197. Portion of a Liver, containing an abscess situated beneath the peritoneal surface of the organ. The adjacent layers of serous membrane are adherent, and its sac is obliterated over the abscess. 152

From the collection of J. R. Farre, Esq., M.D.

Vide Series L, Nos. 3230 and 3231.

CIRRHOSIS.

2198. Section of a Liver, the whole substance of which is indurated and pale from increase of the interlobular connective tissue. Its external surface is tuberculated and nodular, and a similar nodular appearance is shown on the surface of its section. It is an example of what is termed *Cirrhosis*, or *Hobnailed Liver*. XVIII. 15

2199. Section of a Liver, presenting the characters of cirrhosis in a less degree than in the preceding specimen. XVIII. 20

2200. Section of a Liver, the surface of which is deeply lobed and nodulated by the contraction of its substance attendant on the changes constituting cirrhosis. XVIII. 32

The liver was reduced to less than half its natural size, and was throughout similarly diseased. A cast of it is preserved, No. 138.

2201. Section of a Liver, exhibiting an advanced stage of cirrhosis, or "hobnailed liver." Its surfaces present the peculiar nodular tuberculated appearance characteristic of this disease. XVIII. 36

2202. A specimen of cirrhosis of the Liver. 144

From a sailor (Lascar.)

From the collection of J. R. Farre, Esq., M.D.

"NUTMEG" LIVER.

2203. Section of a "Nutmeg" Liver. A change produced by mechanical congestion.

The mottled appearance is produced by the dark red colour of the centre of the lobules, due to atrophy and disintegration of hepatic cells with deposition of pigment granules, whilst the peripheral portions are of a yellowish white colour.

From a case of mitral disease with pulmonary congestion and dilated right heart.

DILATATION OF THE HEPATIC DUCTS.

2204. Part of a Liver, showing the Hepatic Ducts greatly enlarged, their canals being variously dilated and sacculated; and the surrounding tissue condensed. The ducts were engorged with bile, and the hepatic lobules were of a deep green colour from the retention of their secretion, which was due to the presence of a large mass of medullary cancer pressing upon, and occluding the common duct, just before it entered the duodenum. XVIII. 40

For the history of the case see *St. Bartholomew's Hospital Reports*, vol. xvii, p. 209.

THROMBOSIS OF THE PORTAL VEIN.

2205. The Liver from a man aged 57 years. It is highly cirrhosed. The vena porta is completely obstructed by a granular, friable, softish coagulum, adherent to the lining membrane of the vein; no doubt formed some time (probably weeks) before death. The thrombus entered but a very little way into any of the vessels of which the vena portæ is composed, but passed deeply into the smaller branches of the hepatic vein, entering the right lobe, and much less into the branches of the left lobe.

The spleen was large and soft: the stomach and intestines were full of altered blood: there was great ascites and jaundice.—See *Post Mortem Book*, vol. iii, case 55.

2206. A Section through the right lobe of a Liver, which is affected with suppurative pyle-phlebitis. The portal vein at its entrance into the liver is thickened, especially the inner coat, which is stained and covered at one point by a patch of adherent lymph. The vein was filled with an ichorous purulent thrombus, as far as its first and second divisions. The parenchyma of the liver generally is soft and pulpy; in patches, chiefly distributed over the anterior surface and lower part of the organ, it is infiltrated with pus, and broken down. The infiltration, which is of a dirty yellow colour, is limited to a small area around thrombosed branches of the portal vein, as may be observed both in transverse and longitudinal sections of the veins. By the agglomeration of these areas, large patches of broken-down parenchyma are formed.

From a man, aged 31 years, who was suddenly seized with pain in the right hypochondrium and vomiting. He had repeated rigors with sweatings and irregular rises of temperature. A fortnight later he became deeply jaundiced. There was extreme tenderness over, and pain in, the right hypochondrium. The rigors and fever continued, and he died about four weeks after the onset of hepatic symptoms.

Post Mortem:—A circumscribed collection of pus was found around the attachment of the vermiform appendix. A thrombus extended from this along a mesenteric vein to the portal vein. There was apparently no impaction in, or ulceration of, the vermiform appendix.—See *Luke Ward Book*, vol. ix, p. 246.

ECCHYMOSIS IN PYÆMIA, &c.

2207. A Portion of the thin margin of a Liver, showing several small dots and

patches of ecchymosis beneath the peritoneum, and in the superficial portion of the liver substance. They appeared to be in places certainly extravasations, in others only engorged vessels. The liver was pale and friable.

There were ecchymoses on the surface of the heart, and the pericardium contained blood-stained fluid, but there were no ecchymoses in the lungs or pleuræ.

From a man who died five days after amputation of the thigh for disease of the right knee-joint. The parts divided in the amputation were undermined by old suppurating sinuses, and the long saphena vein was full of dark clots. Before death the opposite limb became œdematous, and the superficial veins hard and cord-like. On post mortem examination an old broken-down clot was found at the junction of the femoral and profunda veins in the left side.

OBLITERATION OF THE PORTAL VEIN.

2208. Portion of the Liver of a woman aged 48 years. In the hilus the gall-ducts, hepatic artery, and a great number of small tortuous veins are seen. The portal veins could nowhere be found until, on dissecting deeply in the portal fissure, two tough, narrow fibrous bands were discovered, one running right and the other left, and uniting in what was probably the remains of the portal vein. In the middle of each fibrous band there was a minute channel, ending at the liver. On tracing the branches of the portal vein within the liver towards the portal fissure, they are completely lost just at the fissure, and close to the fibrous bands described above. The hepatic veins, gall-bladder, and ducts were natural. The liver was pale, but natural. No splenic vein could be found. The hilus of the spleen was full of small varicose veins, forming a plexus, which seemed to lead, in chief part, into the coronary veins. The splenic artery was very large, tortuous, and its walls were very much thicker than natural. The spleen was very large, pale, and tough.

The patient had been subject to attacks of hæmatemesis for twenty years, and she died at last after a severe attack. The hæmatemesis was usually preceded for some days by a sense of weight in the splenic region.

The stomach is contained in Series XVII, No. 1905.—See *Post Mortem Book*, vol. iii, Case 160.

MORBID GROWTHS, &c.

MELANOTIC TUMOURS.

2209. A vertical section through the right lobe of a Liver, infiltrated with melanotic sarcoma. The liver weighed 21 lb. 8 oz. The lower part of the section is pale, yellow, and flabby. This more natural-looking part is most sharply marked off from the part above, which is firm, of a greenish black colour, with spots of brown. The growth was secondary to a melanotic sarcoma of the eyeball, for which the globe was excised eighteen months before death, and which had not recurred locally. Secondary growths were found in the other organs of the thorax, abdomen, and in the breasts.

See account of case by Dr. Wickham Legg, *Pathological Society's Transactions*, vol. xxix, p. 225.

There is a drawing of the specimen, No. 277.

2210. Section of a Liver, in which there are several medullary tumours, variously streaked and spotted with melanotic matter. XVIII. 27

2211. Section of a Liver, exhibiting numerous round and oval medullary and melanotic tumours of various sizes. The vessels of the liver were injected through the portal vein; and the injection has passed freely into many of the tumours. XVIII. 29

Presented by Richard Partridge, Esq.

2212. Sections of a Liver, in which there are numerous medullary tumours, most of which contain pigment deposited in spots or diffused through every part of them. XVIII. 23

From the same patient as the specimen of melanosis of the eye; Series XXXIII, No. 2639.

2213. Section of a Liver, in which there are numerous masses of medullary and melanotic substance. XVIII. 26

There were similar deposits in the heart, lungs, and many other parts.

2214. Section of a Liver, in which there are several round masses of medullary and melanotic substance. Some of the masses are pale, and hardly distinguishable from the substance of the liver; others are completely black, soft, pulpy, and shreddy. XVIII. 11

From a man who died with a very large medullary and melanotic tumour in the axilla, and whose case is described by Mr. Langstaff, in the *Medico-Chirurgical Transactions*, vol. iii, p. 277. London, 1812. Nos. 1955 and 1956, in Series XVIII are from the same patient.

2215. Section of a Liver in which are numerous minute deposits of melanotic substance. XVIII. 37

CANCER.

2216. Cancer of the Liver from an infant 5 months old, probably of very rapid growth, as the child was healthy and cheerful until one month before its death. The liver weighed 40½ oz. The lymphatic glands in the hilus were not affected. All the lobes are shredded with round masses of new growth, white, tough, and of all sizes, from the smallest possible to that of a walnut. Viewed under the microscope the morbid growth appeared to consist of a dense fibrillated stroma, with small meshes packed full of small cells, the latter being tolerably uniform in character, about twice the diameter of a red blood corpuscle, oval, containing several glistening particles in the interior, but not distinct nuclei. No cancer was found in any other part of the body.

The case is narrated in the *St. Bartholomew's Hospital Reports*, vol. vii, 1871.
Presented by Anthony A. Henley, Esq.

2217. Portion of a Liver, having at its extremity a large mass of colloid cancer. The remainder of the organ was natural.

From the collection of J. R. Farre, Esq., M.D.

TUMOURS OF UNCERTAIN NATURE.*

2218. Section of a Liver, nearly the whole substance of which is occupied by large medullary tumours. The injection was impelled into the portal vein, and has in some parts freely entered the vessels of the medullary substance. XVIII. 28

This specimen and No. 2210 were prepared and presented by Francis Kiernan, Esq.

2219. Section of a Liver, in which is a large spherical mass of soft, brown, medullary substance. XVIII. 6

From the same person as No. 2803 in Series XXXVI, and No. 2291 in Series XXIV.

2220. Section of a Liver, in which soft medullary substance appears extensively diffused through its tissue. The intervening parts of the liver are healthy. The limits of the healthy and diseased structures are shown by the injection, which has penetrated only the healthy substance. XVIII. 13

2221. Section of a Liver, with numerous deposits of soft medullary substance, some of which are diffused, others circumscribed. XVIII. 17

2222. Section of a Liver, exhibiting deposits of coagula and medullary substance completely filling the trunk and many of the large branches of the portal vein. There are similar medullary deposits in the substance of the liver. XVIII. 10

* No microscopic examination of the following tumours having been made, it is impossible to determine whether they are medullary cancers or soft sarcomata.

Nearly all the branches of the portal vein were similarly filled, and the gall-bladder contained a medullary growth preserved in the next Series, No. 2265.

2223. A Medullary Growth occupying the liver, minutely injected to show the great vascularity of certain portions. 161

From the collection of J. R. Farre, Esq., M.D.

NÆVUS.

2224. A portion of the Liver of a woman, aged 55 years, who died of bronchitis after removal of a scirrhous tumour of the breast. Imbedded in its substance, but circumscribed by a well-marked capsule, is a large nævus. Several other nævi, varying in size, but all smaller than this one, were found in adjacent portions of the liver.

There is a drawing of the specimen, No. 281.

2225. Portion of the Liver from a man aged 28 years. One-third of the Spigelian lobe is occupied by a nævus, the liver tissue being quite absent from this spot.—See *Post Mortem Book*, vol. iii, Case 178. XVIII. 45

ENTOZOA IN THE LIVER.

2226. Portion of a Liver, in which is a Cyst containing Hydatids of various sizes. The structure of the liver appears healthy, but its fibrous and peritoneal coats are thickened where the cyst is in contact with them. XVIII. 2

2227. Portion of a Liver, with a Hydatid Cyst half imbedded in it and half projecting from its surface. The hydatids are nearly all broken and collapsed; the walls of the cyst containing their remains are tough and laminated. The structure of the liver presents the appearances of fatty degeneration. XVIII. 3

2228. Portion of a Liver containing a Cyst like those last described, and of tough, nearly cartilaginous, texture. Within this cyst there was a second cyst, formed in part of membrane like that of a common acephalocyst hydatid, and in part of a much thicker and more opaque substance. This inner cyst has broken into two portions, one of which is suspended, and the other lies loose; the internal surface of the thickest part is covered with nodules, probably secondary cysts. XVIII. 4

2229. A large Hydatid Cyst, projecting from the fissure of a liver.

From a middle-aged woman, who died from the effects of a growth in the brain.—See *Post Mortem Book*, vol. vii, p. 161.

2230. Portion of a Liver, in which there is a solid spherical mass, partly imbedded in its substance, and partly projecting from its surface. The circumference of this mass is apparently formed by a distinct cyst; the central solid part consists of a mixture of a substance like fibro-cartilage arranged in concentric layers, and of a soft, putty-like substance. A portion of the great omentum adheres to the surface of the tumour, and of the contiguous part of the liver. XVIII. 30

It is probable that the cyst had contained hydatids.

2231. A large Cyst, containing Hydatids, which was attached to the liver. The walls of the cyst are thin, tough, and laminated; its inner surface is uneven, pulpy, and shreddy. XVIII. 8

2232. Portion of a Liver, with a Cyst, which contained bile. The walls of the cyst are of a cartilaginous texture. The surrounding tissue of the organ is healthy. The specimen is probably a hydatid cyst, into which bile had escaped. XVIII. 24

2233. Part of a Liver, with half of a large Hydatid Cyst, which occupied the superior surface of the right lobe. Its wall is tough, and in places has degenerated into a calcareous mass. Its interior is occupied by the remains of many hydatids, whose walls, contracted and shrivelled, are recognised by the tortuous lines and fissures seen on the surface of the section. The remaining contents of the original cyst, as well as those of the contained hydatids, are converted into a pultaceous, putty-like substance, filling the interstices between the remains of the cyst wall. XVIII. 39

From the body of a man brought in for dissection.

2234. A Cyst of irregularly lobed form, the walls of which are almost entirely composed of a substance like bone. XVIII. 61

It was taken from a liver, in which were many others of the same kind.

Presented by Dr. Thomas Illott.

2235. Part of a Cyst, which was connected with a liver, and the cavity of which, after suppuration, opened by a fistulous canal through the wall of the abdomen. The walls of the cyst are from one to three quarters of an inch in thickness, very tough and fibrous; its interior is rough and nodular, with a projecting, irregularly-shaped mass of bone-like substance, which could be felt through the canal in the abdominal walls. XVIII. 38

The patient was an elderly gentleman, and the disease was of many years' duration.

2236. Portion of the Liver of a Cow, in which are numerous hydatids, contained in distinct cysts of various size and shape. XVIII. 33

2237. A Cyst, probably hydatid, in the liver of a pig. 211

From the collection of J. R. Farre, Esq., M.D.

FLUKES IN THE LIVER.

2238. A portion of a human Liver, containing flukes (*Distoma hepaticum*).

Taken from the body of a countryman.

Presented by Mr. Messum.

MISCELLANEOUS.

2239. Section of a Horse's Liver, dried. Its substance is nearly filled by deposits, in granules and minute nodules of a substance consisting principally of carbonate and phosphate of lime, with animal matter. XVIII. 31

The lungs were similarly diseased.

INJURIES OF THE LIVER.

2240. Portion of the Liver of a child, deeply and extensively lacerated by a blow upon the abdomen. XVIII. 1

2241. Portion of a Liver, the anterior border of which was punctured by a trocar. On the convex surface of the liver the wound is completely closed by coagulable lymph: on the concave surface it is still partially open, and presents uneven, as if torn, edges. XVIII. 25

The wound was made a fortnight before death in puncturing a cyst connected with the pelvis of the kidney. No ill consequences were apparent.

SERIES XXII.

DISEASES AND INJURIES OF THE GALL-BLADDER AND BILIARY DUCTS.

DILATATION AND THICKENING OF THE GALL-BLADDER AND BILIARY DUCTS.

2242. A Gall-Bladder, of which, in consequence of the lodgment of a calculus within it, the coats are thickened and indurated. Its internal surface has lost its reticular structure, is rough, and at some points ulcerated. A piece of whalebone is passed into the cystic duct, which is very much contracted. XIX. 8

Vide No. 2257.

2243. Bile-Ducts and Gall-Bladder, with a portion of Duodenum. The hepatic and common ducts are much dilated and thickened, in consequence of the passage of calculi through them. XIX. 10

2244. Biliary Ducts, enlarged and thickened in consequence of the lodgment of calculi in them. One of the calculi remains filling a hepatic duct near its entrance into the liver. XIX. 1

EFFECTS OF INFLAMMATION.

2245. Portion of a Liver with a Gall-Bladder altered by chronic inflammation. 170

From the collection of J. R. Farre, Esq., M.D.

Vide Nos. 2242, 2261, 2262.

OBSTRUCTION OF THE BILIARY DUCTS.

By Calculi and other Foreign Bodies.

2246. Portion of a Duodenum, with the Bile-Ducts, dried. A biliary culculus of large size is impacted in the common duct, and one of smaller size in the cystic duct. All the ducts are dilated; especially the common, and hepatic, ducts. XIX. 2.

2247. A Gall-Bladder, with part of the Liver. The muscular coat of the gall-bladder is increased in thickness, and the fundus contains two stones the size of hazel-nuts. The common bile-duct, which is laid open, was much dilated: it contains two large gall-stones, one conical, the other cylindrical. The aperture of the bile-duct was patent. XIX. 22

From a woman, aged 44 years, who died from erysipelas. She was jaundiced and had some abdominal pain.—See *Faith Ward Book*, vol. x, p. 103; *Post Mortem Book*, vol. vii, p. 271.

2248. Gall-Bladder from a woman aged 43 years. It is enlarged and was full of transparent fluid. A large calculus is seen within it, and another smaller one is impacted in the commencement of the cystic duct, which is contracted around it. The common duct was free. The fluid consisted of thick yellowish

mucus with flaky masses suspended in it. There was a distinct history of the occasional passage of gall-stones, accompanied by jaundice. XIX. 17

From the same patient from whom the Specimen No. 2019 was taken, Series XVIII.

2249. A Gall-Bladder, with large Gall-Stones impacted in its neck. XIX. 18

2250. A large Gall-Stone in the lower portion of the common bile-duct. 174

From the collection of J. R. Farre, Esq., M.D.

2251. Portion of Liver with its Gall-Bladder. The common duct is dilated into a considerable pouch, and thus indicates the situation of a gall-stone, which was lodged in its canal. 176

From the collection of J. R. Farre, Esq., M.D.

2252. Portion of a Duodenum, with a large Hydatid, rolled up, and impacted in the common bile-duct, which it dilates, and from which a portion of it protrudes into the intestine. XIX. 12

The patient was a boy 14 years old. Three months before death he had signs of acute inflammation of the liver, and six days before death had acute pain in the right hypochondrium, followed by jaundice. He was relieved for a time, but the pain recurred with greater severity, and he died delirious.

There was a great cyst full of hydatids in the right lobe of the liver.

By thickening and obliteration of the Ducts.

2253. A Gall-Bladder, with the Bile-Ducts. The cystic duct is obliterated, and its coats are nearly as hard as cartilage. The coats of the hepatic and common ducts are, in the greater part of their extent, a line in thickness and indurated. The gall-bladder is dilated; it contained a yellowish-white fluid. XIX. 5

From a woman 40 years old. She had been deeply jaundiced for six weeks. The liver was very large and hard.

Vide Nos. 2255, 2261, 2262.

By Tumours.

2254. Portion of a Duodenum, with a small soft medullary tumour, surrounding and closing the orifice of the common bile-duct. The tumour appears to grow from the mucous membrane. The adjacent parts are healthy. XIX. 13

The patient, a woman, 27 years old, was intensely jaundiced for three months before death. For the last nine days of her life she had copious hæmorrhage from the gums, nose, and intestines, and in the last two days discharged from the latter scarcely anything but blood. She died comatose. The case is recorded by Dr. Ormerod, in the *Lancet*, 1846.

By pressure from without.

2255. A Gall-Bladder and Ducts, with the adjacent Lymphatic Glands. The coats of the gall-bladder are much thickened, especially around its neck; and their section displays a dense, greyish, semi-transparent substance, like hard cancer. At the ductus cysticus the thickening has taken place to such an extent as to obliterate the canal. At this part, also, and around the neck of the gall-bladder, the lining membrane is thickened, rough, and tuberculated. At the base of the gall-bladder there is a small circular growth, composed of numerous close-set little processes upon narrow pedicles. The lymphatic glands around the biliary ducts are much enlarged and indurated, and had the appearance of glands affected by carcinomatous disease. XIX. 3

From a woman, between 30 and 40 years old, who had also carcinomatous disease of the ovaries, kidneys, and lumbar lymphatic glands.

2256. A Duodenum, with the common Bile-Duct and the adjacent lymphatic

glands. The duct is compressed and partly obliterated by a large cyst which contained hydatids. The lymphatic glands in the gastro-hepatic omentum are enlarged and hard. XIX. 7

GALL-BLADDERS CONTAINING CALCULI.

2257. Part of a Liver with its Gall-Bladder. The coats of the latter are much thickened, and its interior is occupied by many polygonal calculi, consisting chiefly of cholesterine. XIX. 15

2258. A Gall-Bladder contracted around two Gall-Stones. The cystic duct is patent, but there was no fluid bile in the bladder. XIX. 16

For the history of the case see *St. Bartholomew's Hospital Reports*, vol. xv, p. 80.

2259. A Gall-Bladder completely filled by a Calculus, which is firmly adherent to its internal surface. The cystic duct is pervious, and appears healthy. XIX. 9

2260. A Gall-Bladder with adjacent portion of the Liver. The former is greatly distended and filled with gall-stones, which are exposed to view by apertures cut in the gall-bladder. 171

From the collection of J. R. Farre, Esq., M.D.

Vide No. 2264.

ULCERATION OF THE GALL-BLADDER WITH PERFORATION INTO THE INTESTINE OR PERITONEUM, FROM THE PRESENCE OF CALCULI.

2261. Portion of a Liver, with the Gall-Bladder, Biliary Ducts, and part of the Duodenum. The gall-bladder is thickened and contracted. A passage is formed by ulceration from the gall-bladder into the duodenum, through which passage a large calculus passed into the intestine. All the biliary ducts are much dilated. A rod of glass is passed from the common duct into the duodenum; but the communication of the cystic duct with the gall-bladder is obliterated. XIX. 11

2262. Portion of a Liver with the Gall-Bladder, which is adherent by dense connective tissue to the liver, pylorus, and first part of the duodenum. The gall-bladder, which contains numerous faceted gall-stones, communicates with the duodenum just beyond the pylorus by two openings, which were occupied by gall-stones; one opening as large as a three-penny piece has been cut across, in the other a piece of glass is placed. The wall of the gall-bladder is much thickened and indurated. The cystic duct was obliterated: but bile flowed from the common duct, when it was cut across. The structure of the liver is normal. XIX. 21

From a woman, aged 28, who performed her duties as a nurse in the Hospital until a week before her death, when she complained of pain in the region of the stomach. Constant and uncontrollable vomiting came on and she died collapsed.—See *Mary Ward Book*, April, 1879; and *Post Mortem Book*, vol. vii, p. 160.

2263. A Gall-Bladder, in the wall of which is a circular ulcerated opening formed over a gall-stone which was lodged within its sac. 175

From the collection of J. R. Farre, Esq., M.D.

MORBID GROWTHS.

CANCER.

2264. A portion of the pyloric orifice of the Stomach with the commencement of the Duodenum, and adherent to them the Gall-Bladder. The wall of the gall-bladder is converted into a mass of medullary cancer: it contains four faceted gall-stones and several small stones lie in the bottom of the bottle. The growth around the gall-bladder was continuous with a mass of

infiltrated lumbar glands. The duodenum was compressed and partially surrounded by it, and its walls were infiltrated with the new growth. A glass rod is placed in the common bile-duct, which is stained with bile: the cystic duct was obliterated. The stomach was enormously dilated, covering nearly the whole abdomen. Secondary deposits were found in the peritoneum, pleura, and surfaces of the lungs; the abdominal organs were not involved in the disease.

The specimen was taken from a woman aged 59 years. She had noticed an increasing swelling of her stomach for five years, but it had given her no inconvenience until about a month before her admission to the Hospital. A hard tumour was felt in the region of the liver. The patient was not jaundiced. Vomiting subsequently set in, and she died of cachexia and exhaustion.—See *Hope Ward Book*, vol. vii, p. 362; *Post Mortem Book*, vol. vii, p. 137; and *Pathological Society's Transactions*, vol. xxxi, 1880.

2265. A Gall-Bladder exhibiting a growth of soft medullary substance from its lining membrane. Except at the seat of this growth it appears healthy.

XIV. 4

From the same man as No. 2222 in the preceding Series.

2266. A Gall-bladder, with a large growth of soft medullary substance from the lining membrane of its neck. XIX. 6

Vide No. 2255.

INJURIES.

RUPTURE OF THE GALL-BLADDER.

2267. A Gall-Bladder, in which there is a rent about three-quarters of an inch long, extending through all its coats, close to its attachment to the liver.

XIX. 14

From a man 50 years old, who was kicked near the region of the liver while stooping. He died in fifteen hours. The gall-bladder appears to have been distended in consequence of the lodgment of a small calculus in its neck.

Presented by James Noble, Esq.

2268. A portion of human Liver with the Gall-Bladder. In its fundus there is a rent through which the bile escaped into the cavity of the peritoneum. The injury was caused by a fall upon a piece of timber. The patient survived five weeks and died of peritonitis.

SERIES XXIII.

DISEASES OF THE PANCREAS.

FATTY DEGENERATION.

2269. Section of a Pancreas, enlarged to nine inches in length and between two and three inches in breadth. Its whole tissue appears to be converted into fat. The lobular appearance of the gland is preserved; but nothing but fat-cells can be discerned in its structure. xx. 3

From a middle-aged man, who was deemed in good health before he was attacked by typhus fever, of which he died in a few days.

CALCULI IN THE DUCTS, &c.

2270. A Pancreas. The much dilated duct, which is laid open, contains very numerous rough spiculated concretions of various shapes and sizes. Its ramifications are filled by similar small concretions, as shown by sections at various parts of the gland. A bristle is passed through the opening into the intestine; immediately before entering the intestinal wall the greatest dilatation of the duct is observed. The concretions consisted of carbonate of lime.

From a man, aged 40 years, who died of diabetes.—See *Post Mortem Book*, vol. viii, p. 87.

2271. A Pancreas, with the vertical portion of the Duodenum. The pancreatic duct near its greater end is dilated into a spherical sac of more than an inch in diameter. A portion of glass is passed from this sac through the rest of the duct (which was obstructed by calcareous matter), into the duodenum. The pancreas itself is diminished in size and less lobulated than natural. Its substance is hard and nearly homogeneous. xx. 2

The patient was a very intemperate man 48 years old. He had long suffered with dyspepsia, diarrhœa, and intestinal discharges of an oily fluid which, on cooling, congealed into a substance like spermaceti. Near the end of his life, he became dropsical. He had tubercular disease of the lungs, cirrhosis of the liver, an ulcer in the stomach, and tubercular ulcers of the intestines.

TUBERCULAR DISEASE.

2272. Sections of a Pancreas, through the whole extent of which there are abundant small deposits of tubercular matter. xx. 6

The specimen, when recent, is represented in the drawing No. 286.

MORBID GROWTHS.

2273. Section of a Pancreas, the whole thickness of which near its larger end is occupied by an oval mass of hard cancerous substance, with a coarse fibrous texture. The portion of the organ between the tumour and the duodenum is healthy: the other portion is of small size, and appears degenerated into fat. xx. 5

2274. Part of a Pancreas. About its centre is a large mass of hard cancer, and in other portions of the organ are smaller deposits of a medullary character. XX. 7

The other viscera presented a natural appearance. During life the symptoms led to a belief in the existence of malignant disease of the stomach.

2275. A Pancreas, in the substance of which, and near its great end, there is a circumscribed tumour. A section of the tumour shows that it consists throughout of a yellowish substance, which in its recent state was soft and of a medullary character. XX. 1

From a man aged 40. Similar tumours occupied the situation of the lymphatic glands in the neck, and elsewhere. There were also medullary deposits in the kidney.

2276. Section of a Pancreas, in which are numerous round masses of medullary and melanotic substance. In many of them the morbid substance appears to be infiltrated in the tissue of the gland; their cut surfaces present the same lobular arrangement as the surface of the gland itself. XX. 4

From the same patient as the melanotic eye, in Series XXXIII, No. 2629.

SERIES XXIV.

DISEASES OF THE LYMPHATIC GLANDS AND VESSELS.

ENLARGEMENT OF LYMPHATIC GLANDS.

2277. Sections of a Lymphatic Gland removed from the groin. It is enlarged to an inch and a half in length, and nearly an inch in width. The whole of its natural texture appears to be replaced by a pale, obscurely fibrous, and very hard substance. XXI. 2

The patient, an adult, was otherwise healthy.

2278. Clusters of enlarged and indurated Lymphatic Glands (? lymphadenoma), removed from a child's neck, in which they formed a tumour extending from the ear to the clavicle, and from the edge of the trapezius muscle to the trachea. Parts of the spinal accessory nerve and of some branches of the cervical nerves may be seen inbedded among the diseased glands. XXI. 4

The child was 6 years old. The enlargement of the glands was first observed fifteen months before their removal, but did not materially increase during the first year, and did not affect the child's general health. The glands were removed from beneath the sterno-mastoid muscle; portions of them lay also behind the internal jugular vein, and in contact with the pleura. The wound made in the operation healed; but the child did not recover from the debility which followed it, and shortly after died with disease of the lungs. The case is related by Mr. Vincent, in the *Medico-Chirurgical Transactions*, vol. xii, p. 247. London, 1823.

ENLARGEMENT WITH CASEOUS DEGENERATION AND TUBERCLE.

2279. A Mass of Axillary Lymphatic Glands, removed from a young girl, aged 17 years, on account of the inconvenience and pain which it caused her. Numerous masses of opaque caseous material are scattered throughout its substance. An intercosto-humeral nerve, and a small artery were imbedded in the substance of the glands.

2280. Portion of an enlarged Lymphatic Gland, containing masses of firm caseous material.

It was removed from the axilla of a woman, aged 28 years, and had existed four years. The enlargement had subsided, but did not disappear altogether under general treatment.—See *Sitwell Ward Book*, vol. vi, p. 264.

2281. A Trachea, adhering to which are some enlarged and caseous bronchial glands.

The lungs were studded with miliary tubercles. The patient died of a caseous tumour in the medulla oblongata, which is preserved in Series XXX, No. 2492.

2282. Mesenteric Glands, enlarged and filled with a soft tubercular substance. The superior mesenteric artery and some of its branches are imbedded among them. XVI. 41

2283. Sections of Mesenteric Glands, enlarged and nearly filled with tubercular matter. The injection displays the vascularity of the small portions of the healthy glandular tissue which remain around the morbid deposit; but none of the injected fluid appears to have entered the tubercular matter. XVI. 62

From the same patient as No. 1878, Series XVI.

2284. Mesenteric Glands, enlarged and infiltrated with caseous material. Adjacent portions of the ileum contain extensive tubercular ulcers. 133A

From the collection of J. R. Farre, Esq., M.D.

Vide specimens in Series XI, Nos. 1686, 1687, 1714, 1756; and Series XVI, No. 1881.

CALCIFICATION OF DISEASED GLANDS.

2285. Bronchial Glands, nearly the whole substance of which is replaced by earthy matter. XIV. 14

2286. An enlarged Mesenteric Gland, laden with calcareous material. 135

From the collection of J. R. Farre, Esq., M.D.

Vide No. 3221a, Series L.

MORBID GROWTHS.

2287. Section of Inguinal Glands, from a man whose penis was removed on account of epithelial cancer. The glands are filled with opaque-white, soft and friable cancerous matter, which conceals or has superseded their natural structure. XXI. 6

From the patient from whom the specimen of cancerous lungs in Series XI, No. 1729, was taken.

2288. A Trachea, with the Arch of an Aorta, the Pulmonary Artery, and numerous Lymphatic Glands. The glands are enlarged, and the greater part of their natural texture appears to be occupied by a soft medullary substance, of which the natural pale colour is variously shaded by the black deposit in the glands. The diseased glands adhere closely to the trachea, and in some degree compress and project into it; the left recurrent nerve also is adherent to some of the glands, and appears compressed by them. XXI. 1

2289. Sections of Bronchial Glands, which are greatly enlarged, and in which the place of the natural texture is occupied by a soft medullary substance. In one of them there are large cavities in the medullary substance, which were filled with blood. The right bronchus is compressed by the diseased glands. XIV. 15

2290. Bronchial Glands, with the Trachea, Heart, and Large Vessels. The glands are enlarged, and soft medullary matter is extensively formed in them. XIV. 17

From the same child as No. 2499, in Series XXX.

2291. A large mass of Morbid Structure, which occupied the situation of the Mesenteric Glands. It is composed of a cluster of distinct tumours, of a soft, reddish-brown, vascular, and spongy medullary substance. XVI. 5

From the same patient as No. 2219, in Series XXI, and No. 2803, in Series XXXVI.

2292. A Larynx, by the side of which are several Lymphatic Glands greatly enlarged and filled by a morbid substance, which, on the cut surface of one of the glands, hangs in fine shreds, like part of a medullary growth. There is also a small flat growth on the mucous membrane lining the interior of the

fold between the epiglottis and the arytænoid cartilage, just beneath the diseased glands.

Presented by George Macilwain, Esq.

Vide specimen in Series XVIII, No. 2070.

MELANOTIC TUMOURS.

2293. Portion of Mesentery, with its Glands. The latter are variously enlarged, and occupied by a malignant deposit, discoloured by an abundance of pigment, which determines their melanotic character. XVI. 123

2294. Section of a cluster of Iliac Lymphatic Glands. One of them is much enlarged, and all traces of its natural structure is lost by the accumulation of medullary and melanotic substance in its interior. The melanotic substance is in but small quantity, and the medullary substance appears mottled by it with various shades of grey, brown, and black, in lines and dots. The centre of the mass is occupied by a small quantity of yellow substance. The other glands contain medullary matter, uncoloured by melanotic deposit. XXI. 5

From a man, 30 years old, who died with numerous very large melanotic tumours in the liver. No other organs were affected, and the signs of diseased liver had been observed only three months.

For Specimens of Chondro- and Ossifying Sarcoma of Lymphatic Glands, see Series XXXVI, No. 2786, *and Series I, No.* 476.

For Specimens of Lympho-sarcoma, see Series VII, No. 1239; *Series VIII, No.* 1555; *Series XI, No.* 1741.

SERIES XXV.

DISEASES AND INJURIES OF THE SPLEEN.

ATROPHY.

2295. Atrophied Spleen, which when fresh weighed 5 dwts. 15 grs. It was otherwise apparently normal to the naked eye.

From a case of lymphoma.

THICKENING OF THE CAPSULE.

2296. A Spleen, in the capsule of which there are several thick and irregularly nodulated masses of a substance resembling cartilage. XXII. 1

2297. A Spleen, the capsule of which is altered in a similar manner.

Presented by Mr. Holland.

CHANGES IN AGUE.

2298. Two portions of Spleen, from patients who died of the Walcheren fever. 182

From the collection of J. R. Farre, Esq., M.D.

TUBERCLE.

2299. The Spleen of a child, in which there are numerous close-set tubercular deposits. They have the form of miliary tubercles, and many of them are softened at their centres, or present a small central cavity consequent on the separation of the softened substance. XXII. 2

2300. A similar Specimen. XXII. 3

2301. A Spleen containing an abundant deposit of tubercle. XXII. 20

From a boy, aged 8 years, who died with general tubercular disease.
The specimen is represented in the drawing, No. 294.

2302. A Spleen, with miliary tubercles in its substance and on its capsules, from a male child, aged 8 months, who was brought to the Hospital dead. Miliary tubercles were found in the pleura, liver, and around some small caseous masses in the lungs. None were found elsewhere in the body. There was pericarditis with much lymph and effusion. The bronchial, mesenteric, and lumbar glands were filled with caseous matter. The spleen was neither enlarged nor unduly congested. There were no tubercles in the pericardium.—See *Pathological Society's Transactions*, vol. xxvi, 1875. XXII. 33

2303. A Spleen, infiltrated with masses of tubercle, some of which are softening in the centre. From a man, aged 25 years, who died from tubercular meningitis. Both lungs contained scattered masses of tubercle, chiefly grey. At the right apex was a caseous mass, about the size of a hazel-nut, and at the left apex were three cavities, the largest capable of holding half an ounce of fluid. There was a nodule of yellow tubercle, about the size of a pea, in the frontal region of

the left hemisphere of the brain. The liver and kidneys were not affected. The patient during life had complained of aching pain over the region of the spleen. The disease had been seven months in progress.

Presented by Dr. Herbert J. Ilott, of Bromley, Kent.

MORBID GROWTHS.

2304. Sections of a Spleen, containing masses of soft medullary substance. The intervening tissue is healthy. XXII. 6

LYMPHADENOMA.

2305. Half of an enlarged Spleen affected with lymphadenoma. The section is marbled by patches of soft whitish lymphoid tissue, intermingled with the red splenic substance. The lumbar and mesenteric glands, which alone were affected, formed a mass connected with the spleen.

From a man, aged 41 years, who was admitted to the Hospital with a large tumour in the left hypochondrium and ascites. He had enjoyed good health until a year before. Death took place from exhaustion.—See *John Ward Book*, January, 1879; *Post Mortem Book*, vol. vii, p. 104.

ENTOZOA IN THE SPLEEN.

2306. A large Cyst in the Spleen, projecting from the superior surface and containing numerous hydatids. There were also hydatids in the liver of the same person.

There is a drawing of the specimen, No. 296.

INJURIES.

RUPTURES.

2307. Section of a Spleen. On the outer surface a large oblong blood-clot is seen beneath the capsule, and lying in a depression upon the parenchyma of the organ.

The specimen was taken from a man who had received an injury to the abdomen.

2308. The Spleen of a child, deeply and extensively lacerated by a blow on the abdomen. XXII. 5

SERIES XXVI.

DISEASES OF THE THYMUS AND THYROID GLANDS.

2309. The Thymus Gland of a child, enlarged and very firm, but of apparently healthy texture. XXII. 8

The child was 12 months old, and had well-marked thymic asthma. It died in convulsions. The heart was enlarged, and the vessels of the brain much congested. The thymus gland weighed 328½ grains; and measures three inches and three quarters in length.

Presented by Dr. West.

ENLARGEMENT OF THE THYROID GLAND (BRONCHOCELE, ADENOMA, AND CYSTO-ADENOMA).

2310. A Thyroid Gland, greatly and almost uniformly enlarged in all parts, but presenting no apparent morbid change of texture. A bristle is passed beneath two strong muscles (Levatores glandulæ thyroideæ) which extend from the body of the os hyoides downwards, to the inner part of each lateral lobe of the gland, and are attached to its surface. The superior thyroid arteries are of their ordinary size, the inferior thyroid arteries are enlarged; each of them is nearly equal in size to an external carotid. The trachea is compressed and flattened by the pressure of the lateral lobes of the enlarged gland. XXII. 14

The opening in the larynx between the thyroid and cricoid cartilages was made in the hope of relieving the dyspœna under which the patient, a boy about 14 years old, laboured. But it was unavailing; and he died suffocated.

2311. Sections of a Thyroid Gland uniformly enlarged in all its parts, so as to form a simple bronchocele. The texture of the gland appears healthy, except in that it is coarser than that of glands of ordinary size, and that cysts of one or two lines in diameter and filled with viscid fluid are irregularly scattered in it. The enlarged gland completely surrounds, and has somewhat compressed the trachea and the lower part of the larynx. XXII. 10

2312. Section of a Thyroid Gland, enlarged like the preceding, but presenting more numerous cysts with viscid fluid, which cysts also appear in many instances partitioned. Its blood-vessels are minutely injected. XXII. 11

2313. The Thyroid Gland of an old man. Its right lobe is much enlarged, and exhibits in its interior several large cysts, which contained a serous fluid. The walls of these cysts are formed by tough fibrous tissue, in which are several plates of earthy matter, like plates of bone; their interior is smooth and polished. The proper tissue of the gland is expanded around the cysts. XXII. 15

2314. A Larynx, Pharynx, and adjacent parts, with the Thyroid Gland. The right lobe of the gland is enlarged by the formation of a cyst of more than four inches diameter in its interior. The walls of this cyst appear to be

formed by the distended tissue of the gland; its interior is rough, and has a large quantity of lymph deposited upon it, some of which hangs in it in loose shreds. At its upper part, the cavity of the cyst communicates with that of the pharynx by a narrow ulcerated aperture (indicated by a piece of glass) near the arytænoid cartilage. The isthmus and left lobe of the gland are healthy. XXII. 16

The patient was an elderly woman, and the enlargement of the gland had long existed. The cyst at first contained a fluid-like serum, which, when withdrawn, spontaneously coagulated. After being twice emptied, the walls of the cyst inflamed, and it was rapidly filled with pus and lymph; its wall ulcerated, and the ulceration extending through the adjacent part of the pharynx, the patient was suffocated by the sudden discharge of its contents, and the passage of some of them into the larynx.

ENLARGEMENT WITH DEPOSITS OF CALCAREOUS MATTER.

2315. A Thyroid Gland, of which one of the lobes is enlarged to three or four times its natural size. Portions of the large lobe are indurated; and in these portions are many deposits of earthy matter. The other lobe and the isthmus of the gland are rather smaller than is natural. XXII. 13

2316. A Larynx and Trachea dried, with large round masses of earthy matter which were contained in a diseased thyroid gland. XXII. 9

2317. Portions of earthy matter, in the form of cysts, from a bronchocele. XXII. 12

Vide No. 2313.

MORBID GROWTHS.

2318. A New-Growth in the Thyroid Gland, from a man aged 43 years. The supra-renal capsules and numerous lymphatic glands, principally the deep cervical, mesenteric, and lumbar, were similarly affected. There were also large masses of new-growth in the liver, which weighed 10 lbs. 12 ozs., in the pancreas, and in the kidneys. Upwards of one hundred small nodules were found in the integument on the anterior surface of the trunk.

2319. A New-Growth in the Thyroid Gland, from a man aged 48 years. Symptoms of pressure on the trachea existed for ten months before death, which occurred suddenly.—See *Post Mortem Book*, vol. i, p. 239, and *Pathological Society's Transactions*, vol. xx, p. 393.

SERIES XXVII.

DISEASES OF THE SUPRA-RENAL BODIES.

AMYLOID DEGENERATION.

2320. Supra-renal Capsule, from a man aged 36 years. The cortical substance is in a state of amyloid degeneration. The medullary structure is not affected. The other capsule was in a similar condition. XXII. 23

He died from phthisis and albuminuria, with amyloid degeneration of the liver and kidneys. But the capsules were most effected. There was no change of colour of the skin.

TUBERCULAR DISEASE (with Caseous and Calcareous Degeneration).

2321. Two Supra-renal Capsules, from a man aged 20 years. The lower one has been laid open. The substance of both is destroyed by tubercular disease. Tubercle was also found in the lungs and mesenteric glands. There was general but not deep bronzing of the skin. The man had been delicate all his life, but had become much weaker during the last year of it. XXII. 26

2322. The right Supra-renal Capsule, from a man aged 34 years. It is somewhat increased in size, and the tisue is nearly wholly replaced by masses of cheesy matter, some very soft; besides these cheesy masses, there is a little translucent greyish material. The right semilunar ganglion was dissected out and found natural: there was no matting together of the parts around. The left supra-renal capsule was diseased in precisely the same manner as the right. The face, neck, nipples, scrotum, and penis were rather deeply tinted of a sooty colour; there were many small black spots on the face, but no pigmentation within the mouth. There were numerous cheesy masses at the apices of both lungs. The liver and spleen were adherent to all the parts around by old adhesions. The right supra-renal capsule was densely adherent to the liver.—See *Post Mortem Book*, vol iii, Case 43. XXII. 31

2323. A left Supra-renal Capsule, seen from behind, with the aorta, the semilunar ganglion, supra-renal and renal plexuses. The great splanchnic nerve is seen coming down from above to the semilunar ganglion, and sending down a branch, which passes behind the supra-renal artery, to the renal plexus below. Near it and to the right, a branch of the pneumogastric comes down and joins the ganglion. The supra-renal artery springs from the renal, which has been cut off short. The vein, with the renal vein, has been cut off to show the nerves. The outer surface of the capsule is rough and irregularly nodulated; one large nodule being especially prominent at the exact point where the nerves enter the organ. The peculiar features of the disease are well seen in the other half of the capsule, the cut surface of which is shown below. A fibrous band, continuous with the thickened fibrous investment, passes obliquely across the organ, dividing it into two unequal parts. No trace of the natural structure remains, but the whole organ is much enlarged and converted into a moderately

firm substance, in parts whitish, in parts of a dirty-brown colour, dotted here and there with small spots and streaks which are now white, but in the recent state had a tint of yellow. The capsule and all the surrounding nerves are imbedded in an unusually large amount of fibrous tissue, which matted together the plexuses. This fibrous thickening extended up the splanchnic and pneumogastric nerves, and became continuous with firm old adhesions, which surrounded the liver and spleen and bound the upper half of the omentum to the anterior abdominal wall. The right capsule was not quite so large, but in other respects similar to the left.

From a woman, aged 31 years, who died under Dr. Tuckwell's care in the Radcliffe Infirmary, Oxford, with well-marked, general, and local symptoms of Addison's disease of the supra-renal capsules.—See *St. Bartholomew's Hospital Reports*, vol. vii.

Dissected and presented by Dr. Tuckwell.

2324. Portions of the two Supra-renal Capsules of a man who died with extensive tubercular disease. They are laden with a pale, yellowish deposit, diffused equally through their entire substance. In one this deposit has in places dried up and become calcified. The capsules were considerably enlarged. The skin retained a natural appearance. XXII. 21

For the history of this case, see *St. Bartholomew's Hospital Reports*, vol. xvi, p. 209.

2325. A Supra-renal Capsule, from an adult, enlarged, and containing a circumscribed deposit of a yellow and firm, probably tubercular, substance. XXII. 17

A drawing is preserved, No. 302.

2326. A Supra-renal Capsule, from an adult, enlarged, and with nearly all traces of its natural structure lost in the deposit of a pale yellow substance, like softened tubercle. XXII. 18

MORBID GROWTHS.

2327. A New-Growth in the Supra-renal Capsules. From the subject from whom Specimen No. 2318 was taken. XXII. 25

2328. A left Supra-renal Capsule, partly converted into a mass of New-Growth: the right was natural.

From the body of a man, aged 50 years. His symptoms during life were chiefly pain in the back and progressive cachexia. There was no pigmentation of the skin. The lumbar vertebræ, lumbar glands, left clavicle, mediastinal glands, lungs, liver and kidneys were more or less affected.—See *Post Mortem Book*, vol. iii, No. 180.

2329. Part of a Supra-renal Capsule, in the substance of which is a large mass of New-Growth. Numerous similar deposits were present in the liver and lungs. XXII. 22

2330. A Supra-renal Capsule, in which nearly the whole of the natural texture is replaced by a mass of firm medullary substance. XXII. 19

The liver and other organs of the same patient were similarly diseased.

SERIES XXVIII.

DISEASES AND INJURIES OF THE KIDNEYS, THEIR PELVES, AND THE URETERS.

HYPERTROPHY.

2331. A Kidney, illustrating compensative hypertrophy such as takes place when the opposite organ has been destroyed, as in this instance it was by suppuration.

AMYLOID DEGENERATION.

2331a. A Kidney affected with Amyloid Degeneration. It is somewhat enlarged, especially the cortical portion. Its surface is smooth, and the section has a translucent, homogeneous, and wax-like appearance.

INFLAMMATION AND ITS RESULTS.

ACUTE PARENCHYMATOUS NEPHRITIS.

2332. Section of a Kidney, enlarged and appearing very pale and soft in every part, except those in which there are large blotches of effused blood. The principal branches of the renal vein are filled by firm dry coagula. XXVI. 25

The patient, a lad, about 19 years old, died with acute dropsy and albuminous urine, which supervened on intemperance and exposure to cold a few weeks before his death.

CHRONIC PARENCHYMATOUS NEPHRITIS (LARGE WHITE KIDNEY).

2333. Section of a Kidney, enlarged, and the cortical substance of which is pale. A fine injection of size and vermilion through the renal artery shows that the whole organ, and especially the altered cortical substance, possesses less vascularity than is natural. The capsule of the kidney was stripped off more readily than usual, and the whole organ is large and soft. The other kidney was similarly altered. XXVI. 22

From a young woman who died with acute general dropsy, and whose urine was albuminous.

Contracting Stage of Chronic Parenchymatous Nephritis.

2334. Section of a Kidney, which is rather smaller than is natural and granulated on its surface. The section of the organ is mottled with yellowish-white firm patches, which the injection has not penetrated. The surface is finely granulated. XXVI. 23

The kidney probably represents the contracting stage of chronic parenchymatous nephritis. The other kidney was similarly altered. The urine was albuminous.

GRANULAR CONTRACTED KIDNEY.

2335. Section of a Kidney contracted to half its natural size, and fissured and granular on its surface. Its whole substance appears pale and tough, and its cortical portion is reduced to a layer less than a line in thickness. XXVI. 30

The patient was a woman, 30 years old. She appeared healthy till six weeks before her death,

when she became anasarcous and had albuminous urine. She died in a state of coma, with pleurisy and pericarditis.

2336. A contracted Kidney, containing at various points numerous small calculi. 191

From the collection of J. R. Farre, Esq., M.D.

Vide No. 3229, Series L.

SUPPURATIVE NEPHRITIS AND PYELITIS, AND THEIR RESULTS.

2337. Section of a Kidney, of which nearly the whole of the glandular structure is absorbed. In its place, and in the pelvis and ureter, there is a soft and white substance, like mortar, consisting of phosphate of lime, with small proportions of carbonate of lime and of animal matter. XXVI. 17

From a woman, 62 years old, who for twelve years before her death had no sign of renal disease.

Presented by S. G. Lawrance, Esq.

2338. A Collection of thick yellowish Fluid, like liquid mortar, which filled the pelvis and sacculated remains of a wasted kidney. It is probably pus, degenerated and thickened by the absorption of much of its liquid part. XXVI. 32

NEPHRO-PHTHISIS (Tubercular Disease).

2339. A specimen in which there is abundant tubercular deposit on the mucous membrane of the pelvis, and in the cavities of the dilated infundibula. XXVI. 7

2340. A Kidney, in which there are many large cavities formed in consequence of abundant tubercular deposits in its substance. The cavities are lined by layers of false membrane coated by tubercular matter. The ureter is thickened, and tubercular matter covers its internal surface. XXVI. 27

There were tubercles in the lungs and several other organs, including the prostate gland and vesiculæ seminales, preserved in Series XXXIX, No. 2847.

2341. A Kidney, and the upper portion of its Ureter, both filled with tubercular matter.

Removed from a boy, aged 17. There was a large deposit of tubercle in the prostate about the neck of the bladder, which, bursting into it, caused retention of urine.

2342. Sections of a Kidney, which, with its pelvis, is occupied by abscess cavities of irregular shape, their walls nodulated, and formed by extensive tubercular deposits. The abscesses approach the surface, and one in the lower section seems to have passed beyond and opens through the capsule. A small trace only remains of the original tissue, a little pale cortical substance being the only indication of it. Abundant lime salts are deposited upon the tuberculated and eroded surfaces. XXVI. 33

The case is fully related in *St. Bartholomew's Hospital Reports*, vol. vii, p. 217.

TUBERCULAR DISEASE OF THE URETERS.

2343. Portion of a Ureter, on the mucous membrane of which there are several large patches of tubercular matter, which have not commenced to break down, and also beneath the mucous membrane small nodules of a similar material can be observed.

From the same case as No. 2412, in Series XXIX.

RENAL CALCULI AND THEIR EFFECTS.

CALCULI IN THE PELVIS OF THE KIDNEY.

2344. A section of the Kidney of a female child, 5 months old, the pelvis of

which is nearly filled by a calculus. The substance of the kidney itself is healthy. XXVI. 28

The child died with fits, which had occurred almost every day after the fifth week of its life. There were tubercular deposits in the lungs and other organs.

Presented by Dr. West.

2345. A Kidney, the pelvis and infundibula of which are dilated and filled by calculi. One large calculus fills the pelvis, and branches from it are continued into many of the infundibula. Smaller calculi fill the other infundibula. The glandular substance of the kidney is nearly absorbed. XXVI. 8

The specimen is represented by Dr. Marcet, in his *Essay on Calculous Disorders*. Pl. ii. London, 1817.

2346. A Kidney, having a large calculus lodged in its pelvis. 189

From the collection of J. R. Farre, Esq., M.D.

2347. Section of a Kidney, with a calculus exactly filling its pelvis and chief infundibula. The substance of the kidney appears indurated, and its surface contracted: its pelvis and infundibula are thickened. XXVI. 29

2348. Left Kidney and Ureter, from a woman, aged 38 years. In the ureter, where it crossed the brim of the pelvis, is an impacted calculus, the size of a horse-bean. The pelvis of the kidney is distended, and contains about twenty stones, three of which are large and faceted. They are probably composed of uric acid coated with phosphates. The pelvis also contained pus, and the abscess communicated by a fistulous passage passing through the left wing of the diaphragm near the ribs, with a left empyæma. The right kidney was large, but otherwise natural.—See *Post Mortem Book*, vol. viii, p. 25.

2349. The Kidneys of the patient from whom the large calculi preserved in Series LII were taken. Both organs are converted into cyst-like sacs, the secreting structures being almost entirely destroyed.

2350. A Kidney contracted, and its secreting structure completely disorganized by changes consequent upon the lodgment of calculi in its pelvis. 190

From the collection of J. R. Farre, Esq., M.D.

2351. A Kidney, in the pelvis of which are large and irregular calculi. The inflammation and suppuration resulting from the presence of the calculi were followed by adhesion of the kidney to the adjacent portion of the descending colon, and the discharge of the contents of its pelvis into the intestinal canal through an ulcer. XXVI. 37

2352. Kidneys from a woman, aged 52 years. The left kidney is very small. The ureter is natural throughout. The right kidney is enlarged, its pelvis is greatly dilated, and was filled with ropy pus; it also contained four small loose calculi. The kidney structure is atrophied in places. The ureter is thickened. —See *Post Mortem Book*, vol. iii, p. 29.

2353. A Kidney which has undergone complete fatty degeneration. The pelvis is occupied by a large branched calculus; the larger branch extends down the ureter.

Microscopic examination showed that the kidney was converted into adipose tissue intermixed with delicate connective tissue. In one or two places the remains of atrophied gland structure could be detected. A microscopic section is preserved, No. 91.

Removed from a woman, who was killed by an accident, and brought to the Hospital for examination.

CALCULI IMPACTED IN THE URETER.

2354. A Kidney, exhibiting the obstruction of the commencement of the ureter

by a large calculus, and the consequent dilatation of the pelvis and infundibula, and absorption of its glandular substance. XXVI. 16

2355. A Kidney, which is much enlarged in consequence of the lodgment of a calculus at the commencement of the ureter. The infundibula are dilated, their mucous lining and the proper substance of the organ are indurated, and appear to be the seat of a purulent deposit. Portions of glass are introduced through two ulcerated apertures leading directly from the kidney to the descending colon. The portion of the colon which thus communicates with the interior of the kidney, exhibits numerous small ulcers of its mucous membrane. The capsule of the kidney, a part of which is reflected, is thickened, indurated, and consolidated with the surrounding tissues. XXVI. 5

The patient was a young man who had suffered from attacks of pain in the loins, which were always relieved by discharge of pus from the rectum. A quantity of pus was found also to have passed from the lower part of the kidney to the back of the psoas muscle.

2356. A Kidney, with a large calculus obstructing the commencement of the ureter. Immediately below the obstruction, the ureter is completely obliterated: above it, the whole kidney is dilated into one large sac; its glandular substance appearing in some parts as a thin layer spread over the surface of the dilated infundibula. XXVI. 24

From a lady, 74 years old, who had been subject for thirty-two years to attacks of renal disease, which were complicated towards the end of life by cancer of the intestines and other parts. The dilated kidney was adherent to the front of the abdomen, and had long been felt as a painful deep-seated tumour.

Presented by Thomas Davis, Esq.

2357. A large Sac caused by dilatation of the pelvis of a kidney, in consequence of the impaction of a calculus in the ureter. It formed a movable abdominal tumour, the nature of which was doubtful during life. XXVI. 38

2358. A Kidney, with a large calculus impacted in the commencement of the ureter. The kidney is much increased in size, and its substance appears indurated, and in parts, infiltrated with pus. The pelvis and infundibula are greatly dilated, and their mucous membrane is thickened, and made rough by the copious deposit of lymph and pus, or of tubercular matter, upon its surface. XXVI. 9

2359. A Kidney, having a large calculus impacted at the commencement of the ureter. The pelvis and the calices are dilated, and the excretory structure of the organ is destroyed. In the dilated pelvis was a quantity of purulent fluid. Perforating the tissues which intervened, this pus had made its way to the surface, and discharged in the loins by means of the sinus seen in the preparation. The other kidney presented a natural appearance. XXVI. 34

2360. Left Kidney of a man, aged 26 years. In the ureter, about three inches from the kidney, a dark-coloured conical-shaped calculus is impacted and adherent to the inner surface of the canal. The ureter above the stone was full of pus, as was also the thickened and dilated pelvis of the kidney. The parenchyma of the organ is atrophied, but its interstitial tissue and capsule are obviously much thickened. The right kidney was greatly enlarged, the capsule rather adherent, and the cortex greatly swollen. The texture was confused, translucent, with a little opacity here and there. The pyramids were pale, feathered out, and indistinct at the bases. The bladder was natural. The left ventricle of the heart was hypertrophied. Small ulcers were present in the mucous membrane of the stomach and duodenum.—*Post Mortem Book*, vol. iii, p. 3.

Vide Nos. 2348, and 2433 in Series XXIX.

SECONDARY CHANGES IN THE KIDNEYS AND URETERS TO OBSTRUCTION OF THE URINARY PASSAGES.

a. Obliteration or Obstruction of Ureter.

2361. A Kidney, reduced to about one-fourth of its natural size, by absorption of its glandular substance. The ureter is obliterated at its commencement: the pelvis is as large as usual. The other kidney of the same patient was healthy in structure, but of nearly twice the natural size. XXVI. 10

2362. A Kidney, of which the ureter is so contracted at its commencement, that it will only admit the passage of a bristle. The pelvis and infundibula are considerably enlarged, and there is an almost complete absorption of the parenchyma of the kidney. XXVI. 4

2363. A Bladder, with the Ureters and one Kidney, of a boy about 10 years old. The muscular coat of the bladder is hypertrophied, and its mucous membrane is thickened, indurated, and very deeply wrinkled. Just before their terminations in the bladder, both ureters are so contracted that they would only admit the passage of a probe. Above these contractions they are both, in the rest of their extent, widely dilated. The pelvis and infundibula of the kidney are also dilated, and its glandular substance is partially absorbed. XXVII. 8

Presented by S. G. Lawrance, Esq.

2364. The Kidneys from a girl, aged 14 years. The left kidney shows an advanced condition of hydro-nephrosis; the pelvis is distended and the parenchyma of the organ is destroyed, with the exception of a few flattened disc-like portions. The pelvis of the right kidney is also dilated, but the parenchyma appears increased in quantity and is swollen, pale, and opaque. The right ureter is dilated to the size of a quill, the left ureter is not dilated. On passing a probe along the ureters in either direction, it was evident that there was a decided constriction at a point half an inch distant from the bladder; the constriction was more marked in the left than in the right canal. When laid open, the right ureter presented nothing definite at the point noted, but in the left ureter the constriction was marked by a very narrow whitish line. The bladder and urethra were quite natural. The liquid taken from the kidneys was of a pale brown colour, sp. gr. 1012, with a faint trace of albumen and flocculent sediment—no doubt dilute urine.—See *Post Mortem Book*, vol. iii, p. 358.

2365. The Kidneys, Ureters, and Bladder from a woman, aged 43 years, who died from suppression of urine. The kidneys are in a state of commencing suppuration. Three inches below the kidney the right ureter is greatly thickened, and its calibre narrowed, but not obstructed. A short distance lower, the walls of the ureter again become thickened and continue so until its entrance into the bladder. The left ureter is affected in a similar manner. The bladder is hypertrophied.

2366. A Kidney, elongated in form, with dilatation of the pelvis and some thinning of the parenchyma. The ureter is irregularly dilated and opens into the bladder by a pin-hole aperture, through which a probe could be passed when the ureter was straightened out, but not otherwise.

From a child, aged 8 months. The other kidney was normal. The dilatation of the pelvis and ureter, and the atrophy of the kidney substance, were probably due to obstruction to the passage of urine into the bladder.

From a rickety child.—See *Post Mortem Book*, vol. viii, p. 41.

2367. The Bladder and a portion of the Ureters, from an old case of stricture of the urethra, with a history of two years' duration. The specimen shows the

ordinary effects of urinary obstruction, as well as an unusual prolapsed condition of the vesical end of both ureters into the bladder, with extreme hypertrophy and dilatation of the tubes themselves. Their vesical orifices are reduced to pin-hole apertures. The prolapsed pouch of the right ureter contains a calculus. On the posterior wall of the bladder a sacculus of mucous membrane is thrust out between the muscular fibres.

The prolapsus of the ureters seems to be due to the disproportion of size between the ureters themselves and their vesical orifices, as if, in the efforts to micturate, the urine, being unable to escape freely from the bladder and distended ureters, the abdominal walls had compressed and borne down the ureters themselves.

The specimen is described in the *Pathological Society's Transactions*, vol. xii, 1863.

b. Obstruction to the flow of Urine from the Bladder.

2368. The Urinary Organs, showing the effects of stricture. There is a firm, fibrous stricture in the membranous portion of the urethra. The bladder is slightly dilated and its walls much thickened. The ureters are largely and irregularly dilated. The pelvis and calices of the kidneys are dilated and the parenchyma of the organs is atrophied. These changes are much more advanced in the left kidney. There are two ureters on the left side, one of which communicates with the upper, the other with the lower half of the pelvis of the kidney, each conducting away the urine from corresponding portions of the organ. They unite at their vesical extremities to form a single duct.

From a boy, aged 15 years, who had long suffered from symptoms of stricture, due to an injury eight years before admission to the Hospital. Death took place from suppurative nephritis and acute cystitis.—See *Henry Ward Book*, vol. vii, p. 167.

2369. Right Kidney, showing dilatation of the pelvis and ureter. The kidney is atrophied, indurated from increase of its interstitial tissue, and it contains cysts.

From a man who died in Matthew Ward, May, 1869. He had long suffered from enlarged prostate and difficulty in micturition. Death took place from extravasation of urine. Several false passages were found at the vesical orifice of the urethra.

2370. The Bladder, Ureters, and Kidneys of a boy, 13 years old. The bladder is contracted, its muscular coat hypertrophied, and its mucous coat ulcerated. The ureters are very tortuous, widely dilated, and thickened. The mucous membrane of each is rough, and lymph and pus are in some parts deposited upon it. The pelves and infundibula of both kidneys are also widely dilated, thickened and rough on their internal surfaces from similar deposit. The kidneys appear enlarged by the dilatation of their pelves and infundibula, but their glandular substance is thinned. XXVII. 29

The patient had phimosis, and had suffered for four years with incontinence of urine. For three months before death he had severe symptoms like those of stone in the bladder. The operation for phimosis was performed, but he died exhausted.

Presented by Thomas Stone, Esq.

2371. Interstitial Nephritis, with atrophy of both kidneys, associated with dilated, varicosely-bulged and thickened ureters, and dilated and hypertrophied bladder.

This condition was probably due to obstruction to the outflow of urine from the bladder.

2372. A Kidney, showing considerable dilatation of the pelvis and calices, with small deposits of yellow tubercular matter on the lining membrane. The surface of the kidney is lobed, owing to the projection of the calices, and the parenchyma of the organ is thinned and distended in small pouches.

From the same child from whom Specimen No. 2435 in Series XXIX was taken. The opposite kidney was hypertrophied, but the pelvis was slightly dilated.

HYDRO-NEPHROSIS AND DILATATION OF THE PELVIS.

2373. A Kidney, in which there is enlargement of the pelvis and infundibula, with thickening and superficial ulceration of their mucous membrane. The glandular substance of the organ is nearly absorbed; its surface appears lobed in consequence of the projection of the dilated infundibula. XXVI. 6

2374. A Kidney, exhibiting great enlargement of the ureter, pelvis, and infundibula, with absorption of part of its substance. XXVI. 3

2375. A Kidney, reduced to a mere cyst, probably from obstructed ureter.

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From the collection of J. R. Farre, Esq., M.D.

2376. A Kidney, of which the pelvis and infundibula are dilated into a large sac. The greater part of the proper substance of the gland is absorbed; its remains form a thin covering over a portion of the sac. XXVI. 2

2377. A Kidney, showing extreme dilatation of the pelvis.

The history is unknown.

SIMPLE CYSTS OF KIDNEY.

2378. Portion of a Kidney, in which there is a large Cyst, with thin membranous walls, which contained a serous fluid. Half the cyst is imbedded in the kidney, and half projects from its surface. XXVI. 1

2379. Portion of the Kidney of an old man, from the surface of which there projects a thin-walled membranous cyst, which contained about four ounces of clear yellow fluid like serum. XXVI. 15

CALCIFICATION OF CYST-WALL.

2380. Section of a Kidney, showing a cyst, the wall of which is formed by a layer of calcareous material.

INTERSTITIAL NEPHRITIS WITH CYSTS.

2381. A Kidney, on the surface of which there are numerous small cysts containing a thick dark-coloured fluid. The reflection of a portion of the capsule shows that the cysts are situated beneath it. XXVI. 11

CYSTIC DEGENERATION.

2382. An injected specimen of Cystic Degeneration of the Kidney. The kidney is seven and a half inches long, four inches broad, and weighs 21½ ounces. The surface is irregularly lobulated from the projection of cysts of various sizes, in the walls of which numerous minute vessels are seen ramifying. The pelvis is much dilated, and the calices are elongated, and extend nearly to the surface of the organ. The parenchyma is converted into congeries of cysts, of various sizes, from that of a walnut to a pea, enclosed in a matrix of connective tissue, which is extremely vascular. The cysts contained a dirty brown fluid, having the odour of decomposing urine. No trace of the normal tissue of the kidney is visible. An attempt was made to inject the uriniferous tubes from the ureter with prussian blue. Here and there a blue streak shows the existence of a tube, and nearly all of these lie immediately within the wall of a cyst. The injection had nowhere penetrated a cyst. The ureter was well-developed, patent, and not dilated.

Microscopic Examination.—In the least altered portions of the kidney, the tubuli uriniferi were found generally dilated and tortuous, and the stages of transition from simple dilatation to the formation of cyst-like cavities could be traced.

Normal Malphigian bodies were visible in places, but many were compressed, and undergoing degeneration. Nowhere could a glomerulus be traced in transition into a cyst. The interstitial tissue was greatly increased, more in some sections than in others. Microscopic specimens are preserved, No. 94.

2383. The opposite Kidney, showing a similar change.

The specimens were taken from a man, aged 47 years. He had been well until a week before his admission to the Hospital, when he was attacked by hæmaturia. When admitted, he passed a considerable quantity of urine, which was of sp. gr. 1010, pale, and contained a large amount of albumen. Two days later, uræmic coma developed itself, from which he died.—See *Matthew Ward Book*, July, 1879; also *Pathological Society's Transactions*, vol. xxxi, 1880.

2384. Section of a Kidney, in the whole substance of which, membranous cysts, of various sizes, varying from that of a pin's head to that of a hazel nut, are thickly scattered. They contained a yellow, viscid, and transparent fluid. Their walls are thin and in close apposition. Only thin layers of the proper substance of the kidney could be discovered intervening between some of the cysts, and forming part of the exterior cortical layer. The vessels of the kidney are injected. XXVI. 20

2385. A section of the other Kidney, of the same person, uninjected. It is similarly and equally diseased; and, like its fellow, nearly three times as large as a kidney of ordinary size. XXVI. 21

2386. Section of a Kidney of a sheep, containing numerous cysts, varying in size from that of a pea to that of a large walnut. When divided, several ounces of a clear, pale, yellow fluid, like serum, escaped. XXVI. 36

2387. A shrivelled, contracted Kidney, consisting of an agglomeration of small cysts. XXVI. 35

The urine (secreted of course by the other kidney) contained albumen.

2388. A small shrunken Kidney, consisting of an agglomeration of small cysts. The other kidney was hypertrophied.

HÆMORRHAGE INTO PELVIS OF KIDNEY.

2389. The right Kidney of a man, aged 25 years, who died of purpura. The section displays a large clot of blood which fills the whole of the pelvis and the calices.

A drawing is preserved, No. 328.

MORBID GROWTHS, &c.

2390. A Medullary Cancer of the Kidney. The tumour is soft, white, brain-like. The arrangement of the growth in large and small alveoli is seen on the surface of the section. The pelvis and calices are filled by the morbid growth, which projected into the ureter. A thin layer of gland tissue is still seen at the lower margin of the organ.

Microscopic Examination. — Broad trabeculæ of connective tissue form large alveoli, crowded with large granular epithelial-like cells, which contain one or more nuclei.

The kidney was taken from a woman, aged 60 years. A tumour had existed in the right loin for sixteen months. Hæmaturia was the first symptom which attracted attention, but it did not afterwards recur. Microscopic sections are preserved, No. 95.

2391. Section of a mass of soft Medullary Substance, mixed with blood, which had its origin in one of the kidneys of a child, about 10 years old, and nearly filled the cavity of the abdomen. XXVI. 12

2392. Medullary Tumour involving a kidney. 195

From the collection of J. R. Farre, Esq., M.D.

HYDATID PASSED IN THE URINE.

2393. Portions of numerous Acephalocyst Hydatids, which were discharged with

the urine of a middle-aged man, and which, it is probable, were formed in the kidney. XXVI. 31

2393a. Hydatids passed through the urethra of a woman, probably from some part of the urinary system. XXVII. 42

INJURIES TO THE KIDNEY.

RUPTURE.

2394. A right Kidney, the lower portion of which has been torn off.

From a lad, aged 19 years, who was crushed by the pole of a van against a wall. Bloody urine was drawn off by the catheter. Death took place twelve hours after the accident. The abdomen was found full of blood clots; the liver was also much lacerated. The tenth rib was fractured.

SERIES XXIX

DISEASES AND INJURIES OF THE URINARY BLADDER.

HYPERTROPHY.

2395. The Bladder of a child, in which the muscular coat is exceedingly hypertrophied. Its other tissues appear healthy.

The child was 4 years old, and suffered intensely with signs of stone in the bladder: but no stone existed, nor was any disease found in the urethra or other part of the urinary organs.

2396. A Bladder, the coats of which are much thickened and indurated in consequence of the lodgment of a calculus in its cavity. The muscular coat is in some parts nearly half an inch thick; and the mucous membrane forms a tough white layer, from one to three lines in thickness, and raised in prominent folds in the cavity of the contracted bladder. The incision in the neck of the bladder was made in the performance of lithotomy. XXVII. 11

Presented by Charles Mayo, Esq.

Vide Specimens Nos. 2419, 2431, 2433, 2442, in this Series; 2370 in Series XXVIII, and No. 3215 in Series L.

DILATATION OF THE BLADDER.

Vide Specimens Nos. 2399, 2408, and 2833.

PARTIAL DILATATION, OR SACCULATION.

a. Of all the Coats.

2397. A Bladder, with an enlarged Prostate Gland. The bladder is much thickened; its coats are indurated and consolidated; and its mucous membrane is in several parts incrusted with an irregular deposit of mucus mixed with calculous matter. At the upper and back part, immediately above the orifice of the left ureter, a portion of the bladder is distended into a sac of considerable size, of which the walls are thinner than those of the rest of the bladder, although all the coats appear to be comprised in the dilatation. XXVII. 32

2398. A Bladder, with part of the Urethra of a man on whom the operation of lithotrity was performed. There were two calculi in the bladder; one of moderate size, which was broken by the instrument; the other, of larger size, was not detected by the instrument, being lodged in a deep recess formed by the dilatation of all the coats of the bladder at its lower and back part, immediately behind the prostate gland. XXVII. 30

The calculi are in Series LII.

b. Of the Internal Coat (a Hernia of the Mucous Membrane between the Muscular Fasciculi).

2399. Sections of a dried Bladder, of very large size, and with numerous cysts

communicating with the posterior and lateral parts of its cavity. Within two of these cysts calculi are lodged. Fifteen calculi were found in the cavity of the bladder: these—which are arranged by the sides of the sections—appear to be composed of uric acid; they weigh from 12 to 880 grains each; their total weight amounts to 2,703 grains. XXVII. 17

2400. A Bladder and Prostate Gland. The lateral lobes of the prostate are enlarged, and a small round tumour is formed by the projection of the third lobe into the bladder immediately behind the orifice of the urethra. The muscular coat of the bladder is much hypertrophied; and its mucous membrane is thickened and indurated. At the upper part of the bladder is a small pouch communicating with its cavity by a narrow orifice, and apparently formed by a protrusion of the mucous membrane between the muscular fibres. XXVII. 24

2401. A Bladder, behind which is a sac nearly as large as itself. The sac, which probably had its origin in the protrusion of the mucous membrane of the bladder between its muscular fibres, communicates with the cavity of the bladder by a small round opening just above the orifice of the right ureter. The muscular coat of the bladder is much thickened; its mucous membrane is healthy, but depressed in small pits between the muscular fibres. Above the communication of the sac with the bladder is an orifice, which was made by a trocar introduced from the rectum, for the relief of retention of urine. There is a smaller sac communicating with the bladder above the termination of the left ureter. XXVII. 10

2402. A Bladder and part of the Urethra, laid open on their anterior aspect. The muscular wall of the former is hypertrophied. Its mucous membrane is thick and coarsely rugous. On the right side, just above the orifice of the ureter, a narrow, funnel-shaped opening leads to a large pouch, lined by mucous membrane, but devoid of muscular tissue. The commencement of the membranous urethra is discoloured, and exhibits two apertures: one, to the left, terminates in a blind extremity; the other, passing behind the urethra, re-enters its canal at the beginning of its prostatic portion, where the latter is somewhat narrowed. XXVII. 41

From the body of a man who had suffered from stricture of the urethra.

2403. The Bladder of an old man, who had long suffered with stricture of the Urethra. Its muscular coat is thick, but weak and flaccid, and its mucous membrane is depressed in pits between the muscular fasciculi. On the right side are two large thick-walled sacs, each between three and four inches in diameter, communicating with the bladder by two small round apertures, and separated from each other by a partition formed by the union of their adjacent walls. They appear to have been formed by portions of the mucous membrane protruded, like herniæ, between fasciculi of the muscular coat, and growing and thickening as they were gradually dilated. XXVII. 33

Presented by J. G. Johnson, Esq.

2404. A Bladder with a portion of the Urethra, from a man, aged 73 years, on whom the operation of lithotrity had been performed, and who died twelve days after the last crushing. The bladder, which is somewhat thickened, presents the usual appearances of acute ulcerative cystitis. A few fragments of calculous matter were found loose in the cavity, but the greater portions were found impacted in two small pouches, each of about the size and shape of a cob-nut. The fragments had evidently become impacted after the operation. The pouches are in the more dependent part of the bladder, near the orifices of the ureters,

of which, however, they formed no part.—See *Abernethy Ward Book*, vol. i, p. 410.

Vide also Specimens Nos. 2417 and 2423; in Series XXXIX, Nos. 2834, 2836; and in Series XL, No. 2878.

EFFECTS OF INFLAMMATION.

ABSCESS BETWEEN THE COATS.

2405. A Bladder, in the posterior wall of which two abscesses have formed. The cavities of the abscesses are exposed by the removal of the peritoneum; they occupied circumscribed spaces between the peritoneal and mucous membranes, in which spaces the muscular fasciculi alone remain, the cellular tissue between them having been destroyed. In several places also the mucous membrane lining the intermuscular spaces has been destroyed, so that the abscesses communicated with the cavity of the bladder. XXVII. 34

ULCERATION.

2406. The Bladder of a woman, in which the mucous membrane has been completely destroyed by ulceration. The bladder is small, and its muscular coat, exposed by the ulceration, appears hypertrophied. Small portions of calculous matter are deposited on the ulcerated surface. XXVII. 1

2407. A similar specimen, showing more plainly the enlarged fasciculi of the muscular coat exposed by the ulceration. XXVII. 20

Vide Nos. 2404, 2434.

SLOUGHING OF THE MUCOUS MEMBRANE.

2408. A Urinary Bladder, the mucous membrane of which has been entirely destroyed, except for an inch around the urethra, and the muscular coat is exposed. The bladder is somewhat dilated. The urethra is natural. The ureters were dilated to the size of a little finger, and their orifices into the bladder would admit a goose-quill. The kidneys were affected with suppurative nephritis.

From a woman, aged 34 years, who had suffered with diabetes.—See *Elizabeth Ward Book*, vol. i, p. 348, and *Post Mortem Book*, vol. ii, p. 95.

2409. The specimen is apparently nearly the whole of the Mucous Membrane of the Urinary Bladder, with a portion of the muscular coat, which was passed per urethram by a woman, aged 26 years. A month previously she was admitted into the Hospital on account of retention with incontinence of urine, and retroversion of the uterus, being at the time about four months pregnant.. Soon after her admission, 96 oz. of urine were drawn off with a catheter, and the urine was subsequently drawn off regularly every few hours. The expulsion of the substance shown in the specimen from the bladder was preceded by retention and acute pain in the hypogastrium, and on examination, the urethra being found blocked by some white-looking substance, the specimen was removed. For some months afterwards the patient was unable to hold her urine for more than from five to twenty minutes at a time. When last seen (about eight months afterwards), she was in much the same condition. Her general health was good. She was delivered of a healthy child at about the full time.

2410. The entire Mucous Membrane of a Bladder separated, as a slough, in one piece. Its tissues do not appear materially changed. The sub-mucous tissue is clean and flocculent, as if only macerated after being separated by dissection. The mucous surface appears, in some parts, excoriated or superficially ulcerated, and much of it is sprinkled over with phosphatic deposits. XXVII. 36

2411. The remains of the Bladder, from which the mucous membrane, in the preceding specimen, sloughed. The exposed muscular coat appears infiltrated,

and covered with lymph and mucus. Parts of it, also, are destroyed by ulceration, exposing the external and peritoneal coverings of the bladder; and in one of these parts, near one of the dilated ureters, complete perforation into the peritoneal cavity has taken place. XXVII. 37

The patient was a woman, between 40 and 50. About three weeks before her death, a small tumour was removed from her fore-arm. She died with typhoid symptoms, but no sign of diseased urinary organs was, at any time, complained of or observed.

TUBERCULAR ULCERATION.

2412. A Urinary Bladder, on the inner surface of which, especially near the neck, are several oval tubercular ulcers, about the size of a threepenny piece; their bases are irregular, and covered with breaking-down tubercular matter.

From a woman, aged 34 years, whose lungs contained miliary tubercles; the right kidney and ureter were also affected with tubercular disease. The ureter is preserved in No. 2343.—See *Post Mortem Book*, vol. viii, p. 188.

2413. A Bladder, exhibiting numerous distinct circular ulcers on the mucous membrane. At the bases of some of these ulcers there are small tubercular deposits. The intervening portions of the mucous membrane, to the borders of the ulcers, are healthy. XXVII. 31

There were tubercles in the lungs and other organs, and the kidneys were affected with tubercular disease.

2414. Part of a Bladder and its Ureters. The entire mucous surface of the former is converted into a rough villous texture, being part of a layer of considerable thickness which has taken the place of the natural lining. In the recent state it was soft and of a pale yellow colour, and was formed by a deposit of tubercular matter in the mucous and sub-mucous tissues. This condition extends up the left ureter, and involved the calices and tubuli of the corresponding kidney. The right ureter remains unaffected. Part of the penis, including the glans, is suspended in front, and the urethra is laid open, to show that the diseased condition prevails to its very extremity. XXVII. 40

From the body of a boy who had long suffered from symptoms of vesical disease, which at first simulated those of a calculus in the bladder. Large quantities of broken-down scrofulous material were constantly passed with the urine. A drawing of the kidney, No. 323, shows its recent appearance.

2415. A Bladder, in which diffuse ulceration (? tubercular) has removed the mucous membrane around its urethral orifice. Near the margin of the diffuse ulceration is a small, oval ulcer, with sharp, abrupt margins. XXVII. 3

2416. A Bladder, in which nearly the whole of the mucous membrane has been removed by ulceration (? tubercular.) XXVII. 19

TUMOURS (AND ALLIED MORBID GROWTHS) OF THE BLADDER.

VILLOUS TUMOUR.

2417. A Bladder, with a uniformly enlarged Prostate Gland. Its muscular coat is thickened. A soft, flocculent, and very vascular villous growth is attached by a narrow base to the mucous membrane at the lower and posterior part of the bladder, immediately behind the orifice of the urethra. A portion of glass is introduced into a pouch or sac formed by the mucous membrane of a part of the lateral wall of the bladder protruded between the muscular fibres. There are two similar small pouches of the mucous membrane on the opposite side of the bladder, close to the termination of the ureter. XXVII. 25

The morbid growth was the source of frequent and profuse hæmorrhage.

Presented by Herbert Evans, Esq.

2418. A Bladder, with a soft and shreddy villous tumour growing from the mucous membrane near the centre of its posterior wall. XXVII. 2

FIBROUS TUMOUR.

2419. A Bladder, laid open by a vertical incision through its anterior wall. A pedunculated growth is attached to its inner surface, stretching transversely across the fundus of the bladder, immediately behind the apertures of the ureters, which are much dilated. The mass is attached at either side, but free in the centre, and was so situated that it might lie forward over the urethral orifice, or be propelled in that direction when attempts were made to void the urine. The tumour, irregularly lobulated, consists of a fine filamentous structure scattered through a granular substance, and invested by a quantity of tessellated epithelium. The walls of the bladder are much thickened. At its upper surface the cavity of an abscess commences and extends to the umbilicus, but no communication can be traced between the two, although the urine continued to escape by the abscess up to the time of the child's death. The small papilla close to the vesical termination of the abscess is all that appears of the urachus. A bristle passed some way down it, but could not, without violence, be forced into the bladder. XXVII. 39

From a child who had suffered for eight weeks from extreme pain during micturition, presently followed by severe pain in the abdomen. A swelling formed about the umbilicus, softened, and was opened with a lancet, some healthy pus escaping. Urine began to dribble away from this opening, scarcely any escaping by the natural channel. The child, after lingering in a wretched state for some days, died. The case is described by Mr. Savory, in the *Transactions of the Abernethian Society*, Part I, vol. ii.

EPITHELIAL, VILLOUS, AND MEDULLARY CANCER.

2420. A Bladder, the mucous membrane of which is covered with nodules and flattened plaques probably of epithelioma. At the fundus the whole thickness of the wall of the bladder is infiltrated by the morbid growth. XXVII. 5

2421. A Bladder exhibiting several irregular papillomatous growths springing from its mucous membrane, probably epithelioma. XXVII. 6

2422. A Bladder having a soft cancerous growth springing from the trigone, and involving the third lobe of the prostate. The surface of the growth is ragged, appears villous, and was sloughy in the recent state. The bladder was distended and contained numerous blood clots. The tumour was found on microscopic examination to be a villous cancer.

From a man, aged 69 years, who was admitted to the Hospital with the following history:—Four years ago he passed some blood with the urine for the first time; and the urine continued to contain blood for a few weeks. Since then he has had about six attacks of hæmaturia, with intermissions lasting sometimes as long as six months. The present attack of hæmaturia dates from about four months ago, and is the longest and most severe he has had.

The passage of urine was preceded by several stringy clots, which obstructed the flow. The urine was of a dark blood colour. No evidence of the disease was obtained by the use of the sound or by microscopic examination of the urine. The autopsy revealed numerous soft secondary deposits in the liver, and some of the bones were softened.—See *Mark Ward Book*, vol. ix, p. 57.

2423. A Bladder, exhibiting a general thickening of its coats, and a large mass of soft medullary substance attached to the mucous membrane of its posterior wall, just above the prostate gland. A sac, as large as the bladder itself, and filled by a similar growth, communicates with the lower and posterior part of the bladder. This sac was situated between the muscular coat of the bladder and the peritoneum covering its posterior wall; one of the ureters terminates in it by an opening through which a quill is passed. A passage has been formed through the prostate gland by a silver catheter. XXVII. 15

The man from whom this specimen was taken had difficulty in passing urine, and occasional

retention, for two years. In the last attack of retention the prostate gland, as shown in this specimen, was pierced; but the withdrawal of the urine did not reduce a swelling, felt above the pubes, and which was produced by the bladder pressed forward by the cyst full of the morbid growth. It is uncertain whether this cyst is formed by dilatation of the ureter, or by mucous membrane protruded from the bladder between its muscular fibres; the latter supposition is more probable.

2424. A Bladder, half the cavity of which is filled by a broken-down, soft, and flocculent mass of soft cancer. The rest of its internal surface is superficially ulcerated. XXVII. 7

2425. The Bladder of a middle-aged woman, the mucous membrane of which is extensively destroyed by ulceration, probably cancerous. XXVII. 26

Presented by Henry Bateman, Esq.

2426. The Bladder of a man, aged 45, who for two or three years before his death had suffered from hæmaturia and other symptoms of a foreign body in the bladder. The bladder is laid open by a vertical incision through its front wall. It is much thickened and indurated; and, springing from the region of the neck, and so extending as to involve the orifices of the ureters and urethra, is a large lobulated cancerous tumour, which occupies a considerable portion of the cavity. The lower surface is ulcerated. XXVII. 45

2427. The Bladder of a man, aged 59, in the lower portion of the anterior wall of which is a considerable growth of cancer. Portions of the disease project into the adjacent parts of the cavity. The prostatic portion of the urethra is distorted. XXVII. 44

2428. The Bladder of a woman, with its cavity nearly filled by a large tumour, which apparently originated within the coats of its posterior part. Portions of glass are passed into the ureters, which open on the front surface of the tumour. The tumour is pale, soft, spongy, and of medullary character. XXVII. 27

2429. A Bladder, affected with medullary cancer. Two large masses of disease are to be seen, which affect the muscular as well as the mucous coats of the bladder, whilst the lesser raised patches are limited to the mucous membrane, and even to its more superficial layers. Around the opening of the right ureter is a mass of cancer infiltrating the muscular coat.

From a man, aged 57 years, who had had symptoms of the disease for about six months before death.—See *Pitcairn Ward Book*, vol. ii, p. 101.

2430. A Bladder, with firm, round tumours between the mucous and muscular coats of its fundus. One tumour projects into the cavity of the bladder; two others project upon its outer surface, and are covered by peritoneum and the muscular fibres of the bladder. XXVII. 4

CALCULI AND OTHER FOREIGN BODIES IN THE BLADDER, AND THEIR EFFECTS.

2431. A Bladder, with the Ureters and Kidneys. The coats of the bladder are thickened, contracted, indurated, and superficially ulcerated, and its cavity contains a calculus. The ureters, and the pelves and infundibula of the kidneys are widely dilated. XXVII. 9

2432. A Bladder, exhibiting hypertrophy of its muscular coat, with enlargement of the prostate gland, and three large calculi nearly filling the lower half of its cavity and resting on the enlarged prostate. The ureters open in the narrow interspaces between the calculi. XXVII. 22

Presented by J. H. Spry, Esq.

2433. A Bladder, contracted, indurated, and thickened, with ulceration extending through the middle of its posterior wall and forming a passage from its cavity

into the rectum. This passage is laid open for the purpose of showing a calculus which is lodged within it. The ureters are dilated, and there is a small calculus in each just before its termination in the bladder. The mucous membrane of the rectum is raised into thick and hard folds. The three calculi at the bottom of the bottle were found in the bladder. XXVII. 16

Presented by James Gillman, Esq.

Vide Nos. 2399, 2404.

2434. The Bladder, Urethra, and a portion of the Os Pubis of a man upon whom the operation of lithotomy had been performed. A portion of the front of the bladder is destroyed by ulceration; the remaining part is thickened and diffusely ulcerated. A large calculus is lodged within the prostate gland, in which it appears gradually to have formed a cavity of such size that only a thin layer of the proper substance of the gland remains around it. XXVII. 13

2435. A Urinary Bladder, somewhat dilated and with some thickening of its wall. At the neck is a cavity extending towards the rectum, and occupying the position of the prostate gland, in which a soft phosphatic calculus lies.

The specimen was taken from a child, aged 3 years, who for six months had suffered from frequent, difficult, and painful micturition, for which circumcision had been performed. The stone was not detected with the sound. The child died suddenly. The right kidney is preserved in Series XXVIII, No. 2372: the left kidney was healthy.—See *Lucas Ward Book*, vol. vii, p. 55.

2436. The Urinary Bladder of a fat pig. It contains a large quantity of crystalline and fatty-looking material, mixed with long bristles: and the hoof seen suspended in the bottle was found imbedded in this material, which completely filled the bladder and appeared to block up the urethra, when the viscus was opened. The crystalline substance consists of triple phosphates.

It appears probable that the hoof and hairs found their way into the bladder from a dermoid cyst, or extra-uterine fœtation, and that these determined the deposit of phosphates.

CALCULOUS DEPOSIT ON THE MUCOUS MEMBRANE.

2437. The Bladder of a girl, 13 years old. Its muscular coat is very thick, strong, and fasciculated. Its mucous membrane also is thickened and deeply wrinkled, and the summits of many of the wrinkles are coated with grains of calculous matter. At the commencement of the urethra the mucous membrane is torn. XXVII. 38

The patient died with peritonitis and suppuration in the pelvis, on the sixth day after an operation, by which small fragments of calculus were removed. The calculus is in Series LII.

Vide Nos. 2397, 2406, 2410.

FOREIGN BODIES REMOVED FROM THE BLADDER.

2438. Three pieces of India-rubber Tubing found, thickly encrusted with phosphates, in the bladder of a man, aged 34 years, who was admitted into the Hospital with symptoms of stone. He stated that, about five months previously, he had fallen astride a board, striking the perinæum, and that after the accident he passed bloody urine for some days; since then he had had much difficulty in holding his water, which was always thick. He persistently denied that an instrument had ever been passed into his bladder. Lithotomy was performed four times, as his bladder was thought to contain a soft calculus. He died from acute inflammation of the whole genito-urinary tract.

2439. A Catheter, which accidentally slipped into a woman's bladder, and, after remaining there for fifteen days, was removed through the urethra after dilatation by sponge-tents. XXVII. 35

Presented by Mr. Toogood, by whom the case is described in his "Reminiscences of a Professional Life," p. 156. The instrument is of the usual size of those employed for the female bladder.

INJURIES OF, AND OPERATIONS UPON, THE BLADDER.

RUPTURE.

2440. A Bladder, exhibiting a rupture in the upper and back part of the fundus.

The hole is large enough to admit a quill on the outside, but of greater extent on the inside. The lining membrane of the bladder is ecchymosed in patches. The whole viscus is thickened, and large fasciculi appear on the inner surface. The membranous portion of the urethra is contracted and beaded with small nodules of lymph.

From a man, aged 45 years. The rupture was the result of a severe injury to the abdomen. He died four days afterwards of peritonitis. The pelvis contained much blood and urine. He had suffered from stricture for some years.

2441. A Bladder, exhibiting a rupture of its anterior wall in a line from the prostate gland to the fundus. XXVII. 21

The rupture was produced by a blow on the abdomen, in the same person as the rupture of the vena cava inferior in Series IX, No. 1607, and of the ileum in Series XVIII, No. 2040.

LITHOTOMY.

2442. The Bladder, Ureters, and Kidneys of a child upon whom the operation of lithotomy was performed a few days before death. The bladder is contracted, its muscular coat is hypertrophied, and its mucous membrane is thickened and indurated. The ureters, pelves, and infundibula of the kidneys are widely dilated. XXVII. 12

2443. The Bladder and Rectum of a child upon whom the operation of lithotomy was performed about a fortnight before death. A bristle is passed through the tract of the wound. XXVII. 18

2444. The Bladder and Kidneys of a man upon whom the operation of lithotomy was performed five years before death. The cicatrix in the mucous membrane within the prostate and neck of the bladder is distinctly visible, and a membranous band extends across it between the front and back parts of the prostate, leaving a small channel, marked by a piece of glass, where it is probable that a portion of the wound in the prostate did not heal. One kidney is much reduced by the absorption of its glandular substance; and its infundibula, pelvis, and a portion of the ureter, are filled by a large branched calculus. In the other kidney the infundibula are dilated and filled by several calculi. XXVII. 23

The patient had considered himself healthy from the time at which he underwent lithotomy; but for some weeks before his death the symptoms of disease of the kidneys were evident.

Vide Nos. 2396, 2434.

TAPPING OF THE BLADDER.

2445. The Bladder and Urethra of a man, whose bladder was punctured above the pubes, twelve years before death, on account of stricture of the urethra. The walls of the bladder are thickened, and small pouches of its mucous membrane are protruded between the muscular fibres. Connected with the front of the bladder is the fistulous tract extending through the parietes of the abdomen, through which the patient discharged his urine from the time of the puncture of his bladder to his death; it is lined by membrane similar to, and continuous with, the mucous membrane of the bladder. The urethra is contracted in its whole length, but pervious. A tough fibrous band, an inch in length, and attached only by its extremities, extends from the veru montanum forwards to the membranous part of the urethra. XXVII. 28

2445a. A Bladder, with an enlarged Prostate Gland, from a man whose bladder had been punctured above the pubes eight years before death. The fistulous passage through which the urine was discharged is about four inches in length and extends from the front of the bladder immediately above the prostate, through the abdominal walls. A piece of glass is introduced into this passage. The lateral lobes of the prostate are enlarged, and a distinct portion of the gland, flattened and triangular, projects into the bladder immediately behind the orifice of the urethra. XXIX. 16

A calculus, preserved in Series LII, was found in the bladder.

Vide also Nos. 2401 and 2829.

Presented by William Kingdon, Esq.

SERIES XXX.

DISEASES AND INJURIES OF THE BRAIN AND ITS MEMBRANES.

DISEASES AND INJURIES OF THE CEREBRAL MEMBRANES.

EFFUSION OF BLOOD ON OR BETWEEN THE MEMBRANES.

2446. A large Clot of Blood between the dura mater and the lateral part of a skull. VI. 39

The blood was effused from the arteria meningea media, which was ruptured by external violence.

2447. Portion of a Brain and its membranes from a lunatic. Blood has been effused between the dura mater and the parietal arachnoid, forming a layer of considerable thickness, firm and partially decolorised. The visceral arachnoid is coated with recently effused lymph. 17

From the collection of J. R. Farre, Esq., M.D.

2448. A large Clot of Blood, adhering to the internal surface of the dura mater which covered the upper part of one of the hemispheres of the cerebrum. VI. 38

The effusion was in consequence of external injury.
Vide No. 2455.

Formation of Blood Cysts and False Membranes between the Meninges.

2449. Portion of Dura Mater, exhibiting a newly-formed, thin, and nearly transparent membrane, closely adherent to its internal surface, and consisting of two layers, which form a large sac containing coagulated blood. VI. 45

The patient was a young man who had an attack of apoplexy, followed by paralysis of the right side and occasional convulsions, a short time before death. The effusion of blood compressed the right side of the brain.

2450. Portion of Dura Mater, exhibiting a newly-formed membrane upon its internal surface. This membrane lines the whole of the dura mater covering the right hemisphere of the cerebrum; its thickness is about equal to that of the peritoneum, and it is very vascular throughout. It has been completely separated from the dura mater, except along one edge, where it is still adherent, and it will be observed that this edge is insensibly lost upon the dura mater, so that the outer surface of the new membrane and that of the dura mater appear to be continuous. The cerebral surface of the membrane is rust-coloured, like partially decolorised blood. Towards its lower part the new membrane is thicker than above, and it is here divisible into two distinct layers. VI. 1

The patient had been deranged for three years before his death. He had had no signs of inflammation of the membranes of the brain, but, shortly before his death, had hemiplegia of the left side. The arachnoid beneath this layer of membrane was thickened.

2451. Portion of a Brain with its Membranes, exhibiting the same changes as the preceding specimen. The new membrane extends for some inches over the right hemisphere of the cerebrum; it adheres firmly to the internal surface of the dura mater, and appears vascular. VI. 2

The patient had suffered for many years with disease of the urinary organs. He died with fever attended by pain in the head and delirium.

2452. A Specimen of the same disease as Nos. 2450 and 2451. The new membrane is here very thick and compact, and has the same rusty colour as No. 2450; it has been partially separated from the dura mater, to which it was firmly adherent. VI. 3

Vide Series L, No. 3377.

ATROPHY OF PORTIONS OF THE BRAIN.—*Vide* Nos. 2551, 2552, 3218.

EFFECTS OF INFLAMMATION (MENINGITIS).

EFFUSION OF LYMPH AND THICKENING, &c.

2453. Portion of Dura Mater, with recent deposits of lymph upon both its surfaces. VI. 7

2454. Portion of Dura Mater, thickened and indurated, with deposit of lymph upon its internal surface. The dura mater is from a line to a line and a half in thickness, and has a tough laminated texture. VI. 5

2455. Portions of Dura Mater and Pia Mater. Blood and lymph are copiously effused upon the external surface of the dura mater. The pia mater is thickened, opaque, and indurated, both in that part which covers the external surface of the brain and in that which penetrates between the convolutions. VI. 4

These changes were consequent on external injury.

2456. A portion of Dura Mater, of which all that part which covered the upper surface of the left cerebral hemisphere was thickened. In some situations it is nearly half an inch thick, and its substance throughout is hard and tough, and appears irregularly laminated. VI. 63

From a man who, eleven years before death, had a violent blow, by which it was supposed that his skull was fractured. The same patient's skull is in Series I, No. 78, his eye in Series XXXIII, Nos. 2575 and 2625, and his heart in Series VII, No. 1292.

SLOUGHING.

2457. Portion of Dura Mater. About its centre is a considerable portion, soft and flocculent on the surface next to the bone. When recent, it was of a brownish colour, the discoloration extending through to its arachnoid surface. At two points perforations existed. The whole of the discoloured part seemed to be in a sloughing condition. The petrous bone, subjacent to this portion of dura mater, was carious, and the tympanum was full of pus. The arachnoid was slightly inflamed. The brain presented a natural appearance. VI. 78

From a case of scarlet fever.

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TUBERCLE.

2458. Portion of a Parietal Bone, showing a papillated growth about the size of a shilling, springing from the inner surface of the dura mater. The opposite surface of the brain was infiltrated with tubercles.

The growth consisted of tubercle, containing well-marked giant cells.

From a child, aged 3 years, who died with general tuberculosis; the brain, with the exception of the portion described, was not affected. A portion of the intestine is preserved in Series XVIII, No. 2008.—See *Post Mortem Book*, vol. viii, p. 46.

A microscopic section is preserved, No. 97.

TUMOURS (AND ALLIED MORBID GROWTHS).

OSSEOUS OR BONE-LIKE GROWTHS IN THE CEREBRAL MEMBRANES.

2459. Portion of Dura Mater, exhibiting a mass of bone-like substance, of low conical form, attached to the side of the falx cerebri. VI. 46

The patient, 28 years old, had from boyhood been subject to severe head-aches. A fortnight before he died he had an acute head-ache, aggravated in paroxysms, with vomiting and slow pulse, which in a few days were succeeded by delirium and fever, and then by partial paralysis and insensibility. Copious effusions of serum and lymph were found, after death, in the cerebral membranes and ventricles.

Presented by Herbert Evans, Esq.

2460. Spicula of Bone-like Substance, arising from the inner surface of the dura mater. 19

From the collection of J. R. Farre, Esq., M.D.

2461. The corresponding portion of the Dura Mater of the man from whom Specimen 878 was taken. The greater part of it is considerably thickened, and in one spot there is an oval bone-like plate.

2462. Three flat portions of bone-like Substance, from the Falx Cerebri of a man who had been subject to epilepsy. VI. 53

2463. Portion of Dura Mater, with large plates of bone-like substance in the Falx Cerebri, and some smaller ones in its neighbourhood. VI. 54

From a man who was subject to epilepsy.

2464. Portion of a Dura Mater, of which a large portion on each side of the falx cerebri is lined by a thin uniform layer of bone-like substance. VI. 35

Vide No. 3260, Series L.

FIBROUS TUMOURS.

2465. Portion of a Skull, with the Dura Mater, exhibiting the growth of a small, oval, firm, fibrous tumour from the internal surface of the dura mater. VI. 16

2466. A Fibrous Tumour attached by a pedicle to the front portion of the Dura Mater. It lay in a depression on the upper surface of the left cerebral hemisphere.

There was no history of cerebral symptoms.

MELANOTIC TUMOUR.

2467. Portion of Dura Mater, in the texture of which there is a deposit of melanotic matter, near the superior longitudinal sinus. VI. 55

From the same patient as Nos. 473, 474, and 475 in Series I, and No. 3315, Series L.

CANCER.

2468. Portion of a Skull, with the Dura Mater, exhibiting the growth of small flat, fleshy tumours from both the surfaces of the latter. The tumours arising from the external surface of the dura mater have caused the absorption of the bone in some situations, so that they appear on the outside of the skull. The skull is considerably thickened, and the diploe appears consolidated. VI. 8

The tumours have the microscopic characters of Scirrhous Cancer.
A microscopic section is preserved, No. 98.

TUMOURS OF UNCERTAIN NATURE.

2469. Part of a left Temporal Bone, with a tumour, nearly two inches in diameter, closely connected with the dura mater over the anterior surface of

the petrous portion. The tumour is probably of fibro-plastic structure; it is firm and close-textured, and, in the recent state, had a greyish hue deeply mottled and suffused with various shades of crimson, pink, and purple. It is thus represented in the drawing, No. 370. VI. 74

DISEASES AND INJURIES OF THE BRAIN.

EFFUSION OF BLOOD UPON THE SURFACE, AND INTO THE SUBSTANCE OF THE BRAIN (APOPLEXY).

2470. Portion of Cerebrum, with an extensive effusion of blood upon its surface beneath the arachnoid membrane.

2471. An Aneurism of the Anterior Communicating Artery. The aneurism, about the size of a hempseed, had ruptured, and blood was poured out into the pia mater of the brain and spinal cord.

The left ventricle of the heart was much hypertrophied; the left kidney was much atrophied, the cause of atrophy being not apparent.

No thrombi were discovered anywhere. No atheroma of aorta or of meningeal arteries. From a man, aged 20 years.—See *Post Mortem Book*, vol. ii, p. 338.

2472. Cerebellum, Pons, and Medulla Oblongata, from a man, aged 45 years. Upon the basilar artery was an aneurism the size of a grain of wheat, which had burst. The blood had broken through the lamina cinerea into the ventricles. The pia mater from the chiasma opticum down to the cauda equina was full of blood. The arteries at the base of the brain were rigid; the heart natural.

See *Luke Ward Book*, January, 1871, p. 4.
For other Specimens of Cerebral Aneurism, see Series VIII, Nos. 1516 *to* 1530.

2473. Portion of Cerebrum, in the substance of which there is a large dark apoplectic clot of blood, apparently recently effused. There is also an effusion of blood upon the surface of the brain, beneath the arachnoid membrane. The blood within the brain is loosely connected with the sides of the cavity in which it lies. VI. 9

2474. Portion of Cerebrum, in the substance of which there is an apoplectic clot of longer standing. The blood, partially decolorised, is of a much lighter colour, and appears drier, than that in the preceding specimen. The surface of the clot is in close contact with the adjacent substance of the brain. VI. 10

The specimen was taken from a person who had had two apoplectic attacks at distant periods.

2475. Portion of Cerebrum, in the substance of which is a dark, apoplectic clot of blood, recently effused. Blood is also effused under the pia mater. 1

From the collection of J. R. Farre, Esq., M.D.

2476. Portion of Cerebrum, containing a large apoplectic clot of about six months' standing. The red colour has in great measure disappeared. 2

From the same patient as the preceding specimen. The man was recovering from the symptoms which this hæmorrhage had occasioned, when the comparatively small effusion took place, and instantly destroyed him. The other viscera were healthy.

From the collection of J. R. Farre, Esq., M.D.

2477. Two portions of Cerebrum lacerated by effused blood, the red colour of which has entirely disappeared. 3

From the same patient as the preceding specimens.

Presented by Mr. Baker.

From the collection of J. R. Farre, Esq., M.D.

2478. Portion of Cerebrum, in the substance of which there is an apoplectic clot, from which the red colour has almost entirely disappeared. The surface of the clot is closely united to the substance of the brain, which also appears more smooth than that immediately surrounding the clots in the preceding specimens. VI. 11

2479. Portions of Cerebrum, in the substance of which are the two parts of a cavity which contained a serous fluid, and which was, probably, formed by the complete removal of an apoplectic effusion, such as is shown in earlier stages in the preceding specimens. The form of the cavity is irregular, but its interior is smooth, and the adjacent substance of the brain appears healthy. VI. 12

The patient was 40 years old, and had an apoplectic attack about four months before his death.

2480. A similar specimen; but the interior of the cavity is smoother than that in the preceding specimen. VI. 13

2481. A Section of a Cerebellum and Pons, with a clot of blood recently effused in the middle of the Pons. VI. 65

The effusion appeared to be the cause of sudden death in a person who was already hemiplegic from a former attack of apoplexy.

2482. Section of a Pons Varolii, showing a small clot of blood in its substance.

From a man, aged 35 years, who was admitted into the Hospital twenty-four days before death with delirium and vomiting. He was sensible when spoken to, and complained of headache; consciousness remained until within half an hour of his death. There was no convulsion or difficulty of respiration. The lateral ventricles contained about 5 oz. of fluid, and the convolutions of the hemispheres were much flattened. The vessels of the brain and the cranial sinuses were remarkably anæmic.

2483. Section of the Pons Varolii, and of some adjacent structures. A considerable quantity of blood is effused into its substance, the clots presenting a striated appearance. 5

In this case the fatal effusion took place into the substance of the cerebrum. Other portions of the brain are preserved in the Museum of Guy's Hospital.

From the collection of J. R. Farre, Esq., M.D.

EFFECTS OF INFLAMMATION (CEREBRITIS).

ABSCESS.

2484. Portion of Cerebrum, exhibiting the cavity of an abscess in its substance. The walls of the cavity are irregular and very rough. VI. 21

2485. Portion of Cerebrum, exhibiting an abscess in its anterior lobe, which communicated with the lateral ventricle of the same side. VI. 22

The patient was a man, 40 years old, who appeared to die exhausted by syphilis and the effects of mercury. The only cerebral symptoms were extreme restlessness and delirium at night. The case is related by Mr. Earle, in the *Medical and Physical Journal*, vol. xxxiii, p. 89. London, 1810.

2486. Portion of Cerebrum, in the left hemisphere of which there is a cavity an inch and a half in diameter, which contained pus. The cavity is situated immediately over the fissura Sylvii; its walls are distinct, thin, smooth on both surfaces, and easily separable from the surrounding substance of the brain. VI. 29

The patient had purulent discharge from the left ear for five weeks before his death. He died suddenly. The petrous portion of the temporal bone, over which the abscess was situated, was extensively diseased. The portion of brain between the abscess and the bone was dark and sloughy.

2487. Portion of Cerebrum, exhibiting an abscess in the upper part of one of its hemispheres, with the dura mater which covered it. The abscess communicates with the lateral ventricle by the aperture through which a bristle is passed. The internal surface of the abscess is rough, and that of the ventricle is lined by lymph. Lymph is also deposited upon the dura mater, and there is an ulcerated aperture in it, which communicated with the cavity of the abscess, and through which a bristle is passed. VI. 47

The patient, a child, 4 years old, had an extensive scalp-wound of the right side, followed by suppuration, sloughing, and exposure of the cranium. A month after the injury was received, and while all seemed proceeding favourably, the child was seized with convulsions, which were followed by partial paralysis and insensibility. By the trephine, a small quantity of matter was let out from between the skull and dura mater, but without relief; and the child died three days after the convulsions began.

Vide Series L, No. 3232.

TUMOURS (AND OTHER ALLIED MORBID GROWTHS) IN THE BRAIN.

CASEOUS OR TUBERCULAR TUMOURS.

2488. Portions of a young person's Brain, in the substance of which there are several masses of firm, yellowish, caseous matter. One of these masses occupies the greater part of the interior of the tuber annulare. VI. 40

2489. Section of the upper part of one hemisphere of a Cerebrum, exhibiting a large oval mass of caseous matter in its substance and between the membranes. A portion of the dura mater has a thick layer of tubercular matter adhering to its inner surface. VI. 48

From the same man as the penis, Series XL, No. 2887.

2490. A Cerebellum, with the Pons and Medulla Oblongata. A large irregularly oval mass of caseous matter is imbedded in the inferior and posterior part of one hemisphere of the cerebellum. A section of the tumour displays the uniform, soft, yellow substance of which it is composed. VI. 50

The patient was 20 years old, and phthisical. Five months before death he began to complain of coldness and numbness from the feet to the knees; this gradually increased, till three weeks later he had almost complete loss of sensation and voluntary motion up to the hips, attended with extreme rigidity and convulsive movements of the muscles of the lower extremities, and of the abdomen, and perhaps also of those of the thorax. The involuntary movements became less, but the loss of sensation more complete, till the patient died. His intellect was unaffected till three days before death.

Presented by Thomas Warner, Esq.

2491. A Cerebellum, on the upper surface of which an irregularly oval mass of caseous matter, rather more than an inch in diameter, is deeply imbedded. The mass was connected with the inferior surface of the tentorium cerebelli, and has been in part detached from the cerebellum, to which it was very loosely attached: it presents a few scattered points of softening. VI. 72

From a lad, 18 years old, who had severe pain in the head, with strabismus and impairment of speech. The first two symptoms subsided during the rapid development of tubercular disease in the lungs and small intestines.

2492. A caseous Tumour lying in an indentation on the right side of the medulla oblongata, which is compressed by it. The tumour appears not to be continuous with the substance of the medulla, but is easily separated from its bed. The section of the growth is smooth, homogeneous, and slightly granular; in the recent state it was of a yellowish-white colour.

Microscopic Examination.—The tumour consisted of tubercular material, in parts reticular, and containing giant-cells with processes, continuous with the reticulum; in others cellular, and again in other parts the elements were almost indistinguishable owing to caseous degeneration.

The specimen was taken from a child, aged 2 years. The only nerve lesion observed was left facial paralysis; she had a strumous finger. Miliary tubercles were found in the lungs, but not in the brain or other organs. The bronchial glands were caseous; they are preserved in Series XXIV, No. 2281.—See *Post Mortem Book*, vol. viii, p. 204.

Microscopic sections of the tumour are preserved, No. 99.

2493. Tumours composed of caseous material, removed from the cerebrum and cerebellum of a boy. There were one hundred and sixty in different parts of the brain. The child had sustained severe injury to the skull some time before his death. 13

From the collection of J. R. Farre, Esq., M.D.

2494. Cerebellum, with the Dura Mater covering it, from a young subject. The natural structure of the cerebellum is almost entirely removed, and in its place there is a firm whitish substance, with specks of calcareous matter scattered through it. VI. 20

CALCAREOUS TUMOURS.

2495. The left Corpus Striatum and Optic Thalamus with the Pons Varolii and adjacent parts of the brain. Lying partly in the posterior extremity of the third ventricle and partly in a smooth-walled space in the left optic thalamus, is a white, rough, and spiculated calcareous nodule of the size of a hazel-nut. Its surface is quite free except at the lower and posterior part, where a rather dense fibrous tissue is continuous with its structure. The brain substance on which it lies, and both crura cerebri, contain a large quantity of tough fibrous tissue which is continuous with the pia mater.

The specimen was taken from a young man, aged 19 years, who was brought to the Hospital in an apoplectic fit, and died twelve hours later. The lateral ventricles were filled with blood, which appeared to have issued from the outer and back part of the left optic thalamus. The calcareous nodule had apparently no connection with the hæmorrhage, the optic thalamus in its neighbourhood being perfectly healthy. There were pendulous vegetations on the mitral valve. With the exception of a fit some years before, he had had no cerebral symptoms. Microscopic examination of the brain substance showed a slight increase of the neuroglia in the neighbourhood of the tumour.—See *Post Mortem Book*, vol. vii, p. 109.

2496. Portion of Cerebrum, with a small, conical, bone-like tumour, which, apparently originating in the pia mater, has penetrated between the convolutions into the substance of the brain. VI. 37

SARCOMATA.

2497. A Glioma occupying the optic commissure, and extending along both optic nerves.

The patient had polyuria, and white atrophy of both optic discs.

A microscopic section is preserved, No. 100.

See an account of the case by Dr. N. Moore in the *Trans. Path. Soc.*, vol. xxxii, 1881.

2498. Part of the Base of the Brain, from the patient from whom the eye, preserved in Series XXXIII, No. 2633, was extirpated. An oval mass of dark-grey, medullary and melanotic substance (like that external to the eye), is imbedded in the surface of the brain, and compresses the optic commissure, the left optic nerve, and the left carotid artery. It is loosely connected with the brain; and the adjacent cerebral substance appears unchanged. IX. 24

A microscopic section is preserved, No. 101.

2499. Portions of Cerebrum, in the substance of which there are several sarcomatous tumours of different sizes. The sections of some of these tumours show that they are of a firm consistence; and that blood is effused in the interior of some, and upon the surfaces of others. VI. 19

From a child, 1 year and 9 months old, whose testicle, with a large medullary tumour, was removed five months before death, and who had similar tumours in the lungs and other parts.

The case is described by Mr. Earle in the *Medico-Chirurgical Transactions*, vol. iii, p. 59. London, 1812.

The right lung is preserved in Series XI, No. 1734; also a microscopic section of one of the tumours of the brain, No. 102.

2500. Section of a Tumour, which pervaded the brain from the surface of the hemispheres to the base of the cerebrum. In its progress it involved parts from which the optic nerves are believed to arise. The ventricles contained rather an excess of serum. The cerebellum presented a natural appearance. There was a similar deposit in the kidneys. 15

From a woman between 20 and 30 years of age, who had suffered from amaurosis for more than two months. Latterly the symptoms had been those of hydrocephalus.

A microscopic section is preserved, No. 103.

Presented by Mr. Baker.

From the collection of J. R. Farre, Esq., M.D.

2501. Sections of a round-cell Sarcoma, which occupied the interior of the lateral ventricles of a boy, aged 12. The tumour is of irregularly oval form, knobbed on its surface, and measures from three to four inches in its diameters. It appears to consist throughout of a soft medullary substance. Portions of the choroid plexus are attached to one of its surfaces. VI. 51

The boy had from infancy been subject to severe pain in the head; eight months before death he became amaurotic and of weak intellect.

A microscopic section is preserved, No. 104.

Presented by W. C. Clough, Esq.

CANCERS.

2502. The Base of a Brain. The superior and anterior portion of the cerebellum is occupied by a soft cancer, of a white colour mottled with red, which extends downwards into the centre of the cerebellum, and projects forwards through the transverse fissure into the ventricles as a roundish nodule about the size of a marble. In the centre of the cerebellum the tumour is uniformly red; it passes indefinitely into the surrounding brain substance. The ventricular cavities are somewhat dilated, and the aqueduct of Sylvius is obliterated.

Microscopic Examination.—The microscopic characters of the growth are those of cancer, which probably originated from the endothelium of the empendyma.

History.—The specimen was taken from a man, aged 30 years; about seven or eight weeks before his admission to the Hospital he went to the Moorfields Ophthalmic Hospital, on account of dimness of vision. During the last six weeks he had suffered from severe frontal headache and restless nights; and for the last ten days from constant vomiting. He was, on admission, very restless, but dull and stupid. The respirations were irregular and very slow, four per minute; the pulse, full, fifty-eight per minute. There was double optic neuritis and photophobia, but no squint. No paralysis. A slight internal strabismus was noticed some days later but otherwise he continued in much the same condition, at times being more stupid, and then improving again. Finally he became comatose, and died a month after admission.—See *John Ward Book*, vol. vii, p. 73.

A microscopic section is preserved, No. 105.

2502a. Portions of Brain, in which there are small circumscribed cancerous tumours. The tumours are round, slightly nodular, moderately firm, and on their cut surfaces appear granular with a mixture of a few radiating fibres. The adjacent cerebral substance appears healthy. VI. 62

In microscopic characters the tumours resemble the preceding specimen.

There were many similar tumours in different parts of the brain, but chiefly on its surface. The patient was an elderly woman, who had suffered long with obscure cerebral symptoms.

A microscopic section is preserved, No. 106.

2503. Portion of Cerebrum, with a small cancerous tumour, which was imbedded between its convolutions. The tumour is nodulated on its surface, and is com-

posed of a firm substance; it was connected with the brain only by the pia mater and arachnoid membrane. VI. 43

A microscopic section is preserved, No. 107.

2504. Portions of the Base of a Skull, with a diseased Pituitary Gland and other adjacent parts. The natural substance of the pituitary gland is lost in a mass of firm, pale, semi-transparent, granular, medullary substance, which extends from the gland into both the left and the right cavernous sinuses. In the left cavernous sinus, the several nerves are lost in the morbid growth, which also protrudes on the inner side of the left Casserian ganglion, and somewhat compresses it. On the right side the nerves are in contact with the surface of the tumour. VI. 73

The patient, a man, 47 years old, had, for about five months before death, paralysis of the muscles of the left eye-ball and of the left levator palpebræ, with dilation of the pupil, and impairment, but not loss, of vision. In the last month of his life he had similar paralysis on the left side. He died with new growths in the salivary and cervical lymphatic glands, and with some apparently cancerous masses in the lungs. The case is published in a Clinical Lecture by Dr. George Burrows, in the *London Medical Gazette*, vol. xxxvi, p. 485. London, July 18, 1845.

2505. Pituitary Body, considerably enlarged and converted into a uniform, firm, white substance. VI. 30

CYSTS.

2506. Portions of granular Adipose Matter, mixed with a few short, stiff, pale hairs, which were found in a dermoid cyst beneath the pia mater covering the inferior surface of the cerebellum. VI. 56

From a stout, strong man, 45 years old, who died very suddenly, while in apparently good general health.

ENTOZOA IN THE BRAIN.

2507. The right half of a Cerebrum. In its centre there is a cavity, in which a large hydatid was contained. The cavity is lined by a thin false membrane. It is much reduced in size by the contraction of the brain; the apertures in it were made after death. The adjacent cerebral substance is healthy. VI. 60

2508. The Hydatid Cyst from the preceding brain. When full, it contained between five and six ounces of fluid. VI. 61

From a girl, 5 years old, in whom signs of cerebral disease had existed for a year before death. For the last three months of her life, she had partial paralysis of motion on the left side. The substance of the brain around the hydatid, as well as in every other part, was healthy.

2509. The Brain of a *giddy* sheep, with part of its Skull, and a Hydatid (Cœnurus cerebralis), which was contained in the left cerebral hemisphere. The greater part of the substance of the hemisphere has been removed or distended around the hydatid, and the whole thickness of the superjacent portion of the skull is in several places absorbed. VI. 69

2510. A Hydatid (Cœnurus cerebralis) from the Brain of a giddy sheep. Minute white pearly bodies are attached in groups to many parts of the interior of the cyst. VI. 70

DISEASES OF THE VENTRICLES OF THE BRAIN AND CHOROID PLEXUSES.

2511. Choroid Plexuses, in which there are small cysts containing a soft substance. VI. 26

2512. Choroid Plexuses, in which there are small thin-walled cysts containing a soft substance. VI. 27

Many of the lymphatic glands of the patient were enlarged, and contained a substance similar to that which fills these cysts.

HYDROCEPHALUS.

2513. A Brain affected with internal hydrocephalus. The lateral ventricles of either side, and the third and fourth ventricles are much dilated; the aqueduct of Sylvius is of about the normal calibre. These cavities contained a slightly turbid serous fluid. The lining membrane of the ventricles is thickened and opaque. A thick opaque and vascular membrane, continuous with the pia mater, extended from the posterior part of the median lobe of the cerebellum to the posterior pyramids of the medulla oblongata, completely closing in the fourth ventricle; no aperture could be detected in it. Only the remains of this structure are now to be seen. The layers of pia mater lining the inner surface of the hemispheres and fissure of Sylvius had coalesced. No tubercles are visible. The central canal of the spinal cord was not dilated.

From a woman, aged 27 years. She had been ailing since her confinement, which occurred six months before her admission to the Hospital. Five weeks ago she became strange in manner and wandered at night. Soon after her admission, persistent vomiting, with noisy delirium at night, came on. Her temperature was raised irregularly, occasionally as high as 102° Fahr. She had on one occasion an epileptiform convulsion, lasting three-quarters of an hour. Finally she lapsed into a state of amentia, and died eleven weeks from the commencement of her illness.—See *Faith Ward Book*, vol. ix. p. 146.

2514. Part of the Brain of a man, 28 years old, who had hydrocephalus in his infancy, and whose head was enlarged and somewhat deformed in consequence of that disease. The whole of the internal surface of the ventricles is finely granulated, and appeared to be indurated. The inferior surface of the edges of the fornix is intimately adherent to the surface of the choroid plexus, and, through its medium, to the upper surface of the optic thalami. VI. 64

The mind of the patient appeared in no degree affected by this disease: he was a very skilful furniture-painter; and died of a disease independent of the state of his brain.

2515. Section of a lateral Ventricle of the Brain dilated from hydrocephalus. 6

From the collection of J. R. Farre, Esq., M.D.

2516. One hemisphere of the Cerebrum, greatly distended from chronic hydrocephalus. The ventricle contained several pints of fluid. 7

From a child 15 months old.

From the collection of J. R. Farre, Esq., M.D.

2517. Portion of Cerebrum, exhibiting the septum lucidum stretched in consequence of the distension of the lateral ventricles with fluid. In the anterior portion of the septum there is a large irregular opening traversed by thin shreds; and the posterior portion of the septum, which remains, is very thin. VI. 41

2518. A similar specimen, except that the opening is in the posterior portion of the septum lucidum, and has smoother and more even edges. VI. 42

HYDROCEPHALIC SKULLS.

2519. Skull of a girl, 11 years old. The enlargement of the skull in consequence of hydrocephalus is effected by its elongation, and by the depression and hollowing of its base. An increase of width appears to have been prevented by the premature and complete closure of the sagittal suture. The coronal suture, and that between the frontal bone and the lesser alæ of the sphenoid, are widely open. The superior walls of the orbits are pressed downwards. The bones,

generally, are thin and light; and in many parts of the inner table are deep depressions and foramina. E. 2

(In Case D.)

2520. The skeleton of a child with a Hydrocephalic Skull. E. 3

(In Case D.)

2521. A Hydrocephalic Skull.

(In Case D.)

Vide also Series I, No. 1, and Series L, No. 3216.

INJURIES OF THE BRAIN AND THEIR CONSEQUENCES.

LACERATION AND CONTUSION.

2522. Portion of Cerebrum, exhibiting a circumscribed softening, with loss of substance, and effusion of small quantities of blood in its convolutions. VI. 36

The consequence of external injury.

2523. Portions of Brain, exhibiting deep lacerations of its substance, with effusions of blood in the anterior, and in one of the middle, lobes of the cerebrum, and in both hemispheres of the cerebellum. VI. 25

From a woman who fell down-stairs upon her occiput. She became immediately insensible; and died on the fifth day, with signs of acute inflammation of the brain. A fracture was found extending from the transverse ridge of the occipital bone through several portions of the petrous part of the temporal bone.

GUNSHOT INJURIES.

2524. Portion of Cerebrum through which a bullet passed in the track which is indicated by a piece of glass, and which terminates in a rounded cavity, wherein the bullet was lodged. VI. 31

The patient fired two pistols into his mouth. He appeared to suffer but little from the injury, and was able to rise from his bed on the sixth day after the injury. He died with hæmorrhage on the twelfth day.

HERNIA CEREBRI.

2525. Portions of Brain, Skull, and Cerebral Membranes, exhibiting a Hernia Cerebri. The front of the preparation shows a vertical section of the protrusion and of the part of the brain from which it has arisen. In the centre of the protruded brain, which consists of medullary substance, the vessels have given way and blood is effused in it. The portions of the skull and of the membranes of the brain surrounding the base of the protrusion, were included in the section, for the purpose of showing how the protrusion has taken place through the openings formed by ulceration in the dura mater and pia mater, and through the aperture in the bone. VI. 32

2526. Section of the protruded Brain last described. The deep groove which intervenes between the outer part of the protruded mass and the portion of brain from which it has arisen, was occupied by the bone and by the membranes of the brain. VI. 33

The patient, a boy, 13 years old, had extensive fracture of the frontal bone, and several portions of bone were removed without injury of the dura mater. The protrusion of the brain began on the fifth day after the injury, and increased, without disturbance of the intellect or other remarkable symptoms, till the tenth day, when the protruded mass, consisting of healthy cortical and medullary substance, was cut off. For the next ten days the protrusion was restrained by firm pressure; but, insensibility ensuing, the pressure was discontinued: the protrusion at once again made progress, and the patient died on the twenty-seventh day after receiving the injury, with softening of the brain. The case is published by Mr. Stanley, in the *Medico-Chirurgical Transactions*, vol. viii, p. 22. London, 1817.

2527. Portion of the Brain and its Membranes and of the right Frontal Bone of a boy, aged 8 years, who four months before his death sustained a compound fracture of the right frontal bone. A fortnight after the accident a portion of

the brain began to protrude which gradually increased until his death. From time to time serum and pus were let out from the wound, always with relief to the cerebral symptoms. A considerable portion of cerebral substance protrudes beyond the integuments, and the section shows its continuity with the rest of the brain. Beneath the adjacent portion of dura mater is a large cavity which was filled with pus.

2528. Several large portions of Cerebrum, which protruded in a case of Hernia Cerebri, and were removed during life. VI. 23

The patient was a boy, 12 years old. He had fracture with depression about the lambdoid suture. Portions of bone were removed without injury of the dura mater; on the tenth day after the fracture, the hernia of the brain appeared, and in three days was as large as an orange. He died on the third day after the removal of these portions of brain, in which, when first removed, both the cortical and medullary substance presented a natural appearance. The case is described by Mr. Stanley, in the *Medico-Chirurgical Transactions*, vol. viii, p. 14. London, 1817.

2529. Portions of Cerebrum, which protruded in a case of Hernia Cerebri, and were removed during life. VI. 34

The patient, a boy, 11 years old, had fracture of the frontal bone, several portions of which were removed, without injury to the dura mater. The protrusion began on the seventh day; it was twice removed, and as often reproduced; but the portion last protruded sloughed off, and the patient completely recovered. The case is published by Mr. Stanley, with the preceding one.

2530. False Hernia Cerebri. Through an opening in a portion of the skull-cap, granulations, springing from the brain, protrude.

SERIES XXXI.

DISEASES AND INJURIES OF THE SPINAL CORD AND ITS MEMBRANES.

DISEASES AND INJURIES OF THE MEMBRANES OF THE SPINAL CORD.

EFFUSION OF BLOOD BETWEEN THE MEMBRANES.

2531. Dorsal and Lumbar Portions of a Spinal Cord, in which a considerable quantity of blood has been effused in the tissue of the pia mater, especially on the anterior aspect, and about the roots of the nerves. There are several milk-white, oval, and irregular spots, like portions of cartilage, upon the arachnoid. The substance of the cord itself is healthy. VII. 9

From an elderly woman, who, three weeks before her death, had an attack of cerebral apoplexy, the symptoms of which were slight, though between two and three ounces of blood were effused in the anterior lobes of the cerebrum and in the membranes and arachnoid sac covering them, and at the base of the skull. The time at which the effusion into the spinal membranes happened is uncertain.

A drawing is preserved, No. 381.

EFFECTS OF INFLAMMATION (SPINAL MENINGITIS).

EFFUSION OF LYMPH, &c.

2532. Spinal Cord and its Membranes from a case of rapidly progressive Spinal Meningitis. Thick greenish lymph extends from the cauda equina to the cervical enlargement. It lies between the pia mater and arachnoid. The cord itself appeared softened, but not otherwise altered. The inflammation is thought to have extended from an abscess (from which the patient had suffered for many months) along the sacral or lumbar nerves, through the intervertebral foramina and so along the cord.—See *Lawrence Ward Book*, vol. iv, p. 377.

2533. Portion of a Spinal Cord partially surrounded by a firm, irregularly shaped deposit, contained between the dura mater and the neighbouring vertebræ, involving through its pressure the adjacent nerves. VII. 12

From a man who had suffered from paraplegia for a considerable time preceding his death.

2534. Portion of a Spinal Cord, with its Membranes, exhibiting a firm, lobulated, mass in the tissue behind and by the sides of the dura mater, within the third, fourth, and fifth dorsal vertebræ. The spinal cord was compressed by it, but not otherwise altered. VII. 6

The patient was 36 years old. He had slight signs of the disease about fifteen months before death. For the last six months of his life he had paraplegia. The growth shown in the preparation, when recent, appeared vascular, and was connected, through the intervertebral

foramina, with a firm, white, caseous substance, like softening tubercle, deposited in the tissues covering the posterior part of the spine, from the second to the sixth dorsal vertebra. More superficially, there were deposits of pus beneath the trapezius and other muscles of the back. The tumour was loosely connected with both the dura mater and the vertebræ. The vertebræ were softened, but in other respects healthy.

2535. Part of the Dorsal Portion of a Spinal Cord, with a thick irregular layer of lymph and tubercular matter surrounding the dura mater, and slightly compressing the cord. Both the cord and the dura mater appear healthy in their texture. VII. 10

The patient was a young man who had paraplegia, which he believed to have originated in a sprain. Tubercular matter was deposited in and upon the adjacent vertebræ; and some of their intervertebral cartilages, as well as their own texture, were destroyed. There was no distortion of the spine.

Vide No. 2543.

TUMOURS (and Allied Morbid Growths).

CARTILAGINOUS OR BONE-LIKE PLATES IN THE MEMBRANES.

2536. Portion of a Spinal Cord, exhibiting two small thin plates of a milk-white substance, like cartilage, connected with the arachnoid membrane. VII. 1

2537. A similar specimen. VII. 2

2538. The Lumbar Portion of a Spinal Cord, with the roots of the nerves and its membranes. There are numerous thin white plates of substance like cartilage connected with the arachnoid membrane, especially with that portion of it which covers the posterior surface of the cord. VII. 5

From a woman, 40 years old, who, for many years, had suffered severely from neuralgia in the left knee-joint.

FIBROUS TUMOUR.

2539. Portion of the Dura Mater enveloping the bundle of nerves constituting the Cauda Equina. A tumour, of a firm fibrous texture, is connected with the external surface of the dura mater, and being wholly contained within the spinal canal, made considerable pressure upon the nerves. VII. 4

The patient, 33 years old, was suddenly seized with pains in the loins and paraplegia, and with acute pain affecting the lower extremities. The paralysis extended upwards; sloughs formed on the sacrum; and he died two months after the beginning of his illness.

CANCER.

2540. The Cervical Portion of a Spine. A soft brain-like tumour is seen projecting on the left side of the column, and surrounding the nerves, some of which are enlarged and infiltrated. The growth is attached to the posterior surface of the dura mater, and the left side and posterior surface of the spinal cord is slightly compressed from the fourth to the sixth vertebræ. A portion of the fourth cervical vertebra is softened and infiltrated with the growth.

The tumour was found on microscopic examination to be a carcinoma. There was a growth having the same naked-eye characters in the pancreas, and secondary deposits were found in the liver.

From a man, aged 46 years, who, when first seen, complained of pain and loss of power in the left upper arm. The deltoid and biceps muscles wasted, and after an interval the left arm became completely paralysed. Later he gradually lost power in the right arm, and finally paralysis of the legs and apparently of the intercostal muscles supervened.—See *St. Bartholomew Hospital Reports*, vol. xv, p. 257.

2541. The upper portion of the Spinal Cord of a man aged 35 years. On the anterior surface between two and three inches below the medulla oblongata, a

tumour about the size of a hazel nut is seen. It is adherent to the outer surface of the theca, but does not involve the arachnoid.

The tumour was composed almost entirely of cells like those found in specimens of actively growing soft cancer. The corresponding portion of the cord was softened.

The man had suffered for eight or nine months from pain in the neck and shoulders, which was attributed to rheumatism. For the last four or five months an alteration in his gait had been observed. The shoulders were elevated, and the neck shortened. For two months he had been unable to wear a collar. One month before his death the limbs and trunk became paralysed. The power of the left arm and leg first failed, and in the course of a few days the paralysis was complete. Urine and fæces passed involuntarily. The immediate cause of death was paralysis of the respiratory muscles.

DISEASES AND INJURIES OF THE SPINAL CORD.

DILATATION OF CENTRAL CANAL.

2542. A portion of a Spinal Cord, of which the central canal is so extremely dilated that the cord is a mere tube of nerve substance. The dilatation was greatest in the cervical region, and gradually diminished, not extending to the lumbar enlargement. The ventricles of the brain were dilated, and contained a large quantity of clear fluid. The membranes of the cord were normal.

From a woman, aged 22 years. On her admission to the Hospital there was complete loss of power and sensation of the left arm, and partial loss of power and sensation of the right arm. There was also partial paralysis of both sides of the face; she could only speak in an under tone. The lower extremities were not affected. The affection of the left arm had existed two years, and of the right arm six months. She died soon after her admission apparently in an epileptic fit.—See *Hope Ward Book*, vol. viii, p. 291, and *Post Mortem Book*, vol. viii, p. 123.

EFFECTS OF INFLAMMATION (MYELITIS).

2543. Lower half of a Spinal Cord, the whole substance of which is softened. It is surrounded by a layer of lymph deposited in the tissue of the pia mater. This layer is in parts nearly a quarter of an inch thick; the lymph had a greenish gelatinous aspect, but is now pale, contracted, and wrinkled. At one part, the cord is crossed by a narrow band of firm, yellow substance, and its whole natural structure here seems to be destroyed. VII. 8

The patient was 12 years old. Nearly six months before death he began to have signs of paralysis of the lower extremities; and these, in the following five weeks, almost imperceptibly increased, till he had complete loss of sensation and motion in the parts below the umbilicus, with retention of urine and incontinence of fæces. After this time, signs of acute inflammation of the membranes of the spinal cord and of the base of the brain ensued, from which, as well as from his previous symptoms, he for a time partially recovered; but they returned, and he died with sloughing over the sacrum. Besides the disease shown in the preparation, the pia mater at the base of the brain was infiltrated with lymph and pus.

EFFECTS OF PRESSURE FROM VARIOUS CAUSES.

a.—From Disease of the Vertebræ.

2544. Part of a Spinal Cord from the dorsal region. A portion of it, about half an inch in length, is soft, and reduced to less than half its natural size. VII. 7

From a case of paraplegia, with angular curvature of the spine, in a lad, 18 years old. Opposite the contracted part of the cord a short process of bone projected from the angle of the curvature into the spinal canal. The portion of spine is preserved, Series V, No. 1098. *Vide* No. 1102 in Series V.

b.—From Morbid Growths.

2545. Spinal Cord from the level of the seventh cervical to that of the third dorsal vertebra. Medullary cancer involving the muscles of the back made its way through the arches of the second dorsal, behind the transverse process on the left side, and compressed the cord. The varied diameters of the cord are noted on the side of the preparation. VII. 14

The case was marked by slowly increasing paralysis of the intercostal muscles and of the lower half of the body.

Vide Nos. 2540 and 2541.

INJURIES AND THEIR CONSEQUENCES.

LACERATION AND EFFUSION OF BLOOD INTO THE CORD.

2546. Section of the cervical portion of a Spinal Cord. Its exterior appears unchanged, but in its interior there is an extravasation of blood, with laceration of its grey substance. VII. 11

This injury was produced by a forcible bending forwards of the head. One of the lower cervical vertebræ was fractured and displaced.

2547. Portion of a Spinal Cord, from a case of dislocation and fracture of the spine. The substance of the cord, in two inches of its length and in its whole thickness, is softened, and mixed with blood effused from its vessels. The altered portion of the cord was situated opposite to the injured vertebræ. VII. 3

2548. Portion of a Spinal Cord laid open by an incision to show crushing, with extravasation of blood into its substance produced by a fracture of the fifth cervical vertebra.

From a man, who was thrown out of a cart backwards on to his head, and was admitted to the Hospital with a fracture of the upper part of the spine. He died a few hours after the injury.—See *Kenton Ward Book*, vol. vi, p. 295.

Vide Nos. 1146 and 1160 in Series V.

SOFTENING.

2549. The lower extremity of the Spinal Cord of a man, aged 65 years, who fell from a height of twelve feet, striking his loins, twenty-four days before death. The injury was followed immediately by paralysis of the sphincter ani, and anæsthesia of the surrounding skin. After an interval of seventeen days there was partial loss of sensation of the lower extremities. The nerves of the cauda equina show no damage, but a portion of the cord, half an inch from the commencement of the filum terminale, and about one-third of an inch in length was, through its whole thickness, soft, almost diffluent, and of a brownish yellow colour. Above and below this part the cord was healthy.

Vide No. 1157 in Series V.

REPAIR AFTER DIVISION.

2550. Part of the Spine and Spinal Cord of a pigeon. The spinal cord was divided transversely, just above the level of the ossa innominata, two months before death. Complete paraplegia was produced by the division of the cord, but in the succeeding two months the healing was nearly completed, and the pigeon regained the power of standing and walking slowly. VII. 13

The division was made by Dr. Brown-Sèquard.

SERIES XXXII.

DISEASES AND INJURIES OF NERVES.

ATROPHY.

2551. Portion of a Cerebrum, with the Optic Nerves and the Eyes. The optic nerves are considerably diminished in size, thin and flat in their whole course from the retina to the thalami. The optic thalami are also small. The eyes are reduced in size. VIII. 6

From an aged woman, who had been totally blind for twelve years.

2552. Portion of Cerebrum, with the Pons and Medulla Oblongata. Bristles are passed beneath the optic nerves, which are very much attenuated, and which could be traced from the commissure for only a certain distance upon the crura cerebri, and then seemed to terminate in the surrounding medullary substance. The optic thalami are small. The corpora quadrigemina have undergone no change. VIII. 8

From an aged woman, who had been totally blind for many years.

2553. Portion of a Cerebrum, with the Optic Nerves and remains of the Left Eye. The cornea is opaque, and the coats of the eye are collapsed. The left optic nerve is considerably diminished in size between the diseased eye and the optic commissure. Behind the commissure, the nerve on the right side is rather smaller than that on the left; but the thalami appear to be of equal size. VIII. 5

2554. Portion of the Brain, with the Optic Nerves, of a Horse which had long lost the sight of the left eye. The left optic nerve is diminished in size from the eye to the commissure; and behind the commissure, the nerve on the right side is scarcely more than half as large as that on the left. VIII. 18

Vide No. 3218 in Series L.

TUMOURS (AND OTHER ALLIED MORBID GROWTHS) IN, OR INVOLVING, NERVES.

FIBROUS TUMOURS.

2555. A Posterior Tibial Nerve, in which there is a circumscribed oval Tumour, composed of a soft grumous substance. The component fasciculi of the nerve are separated and spread out around the tumour: the peroneal nerve is adherent to the surface of the neurilemma extended over the tumour. VIII. 1

Microscopically the tumour consists almost entirely of fibrous tissue.—See Microscopic Drawing, A. 26.

A drawing of the tumour is preserved, No. 388.

2556. A Median Nerve, in which there is a small oval Tumour, composed apparently of medullary substance of a light brown colour. The tumour was completely imbedded in the substance of the nerve, the filaments of which are separated and extended around it. VIII. 13

The tumour consists chiefly of fibrous tissue. A microscopic section is preserved, No. 108; and a drawing, A. 27.

2557. Portions of the Internal Cutaneous and Posterior Interosseous Nerves from the fore-arm of a woman, aged 75, to which large fibrous tumours are attached, and included amongst the filaments. In other portions of the nerve smaller tumours of varying size are seen more or less completely invested. The larger ones had existed for more than thirty years; they occasioned considerable pain. VIII. 20

2558. A large Tumour of fibrous structure, which has undergone in its central portion, degeneration and softening. It grew in connection with the musculo-spiral nerve of a man, aged 40 years, and had been many years in progress. The tumour was removed with the part of the nerve which it involved. The patient had subsequently paralysis of the parts to which the musculo-spiral nerve is distributed. VIII. 22

2559. Portion of an Axillary Artery, with the Axillary Plexus of Nerves, and a Tumour connected with them. A section has been made of the tumour, to show its interior, consisting of a soft fleshy substance, some of which appears deposited in cells. A nerve, presumed to be the median, is connected with the tumour at its upper and lower extremities. At its upper end, the filaments of this nerve are expanded over the tumour, in such a manner as to indicate that it commenced within the nerve. VIII. 12

The tumour consists for the most part of well-formed fibrous tissue, but contains also some embryonic connective tissue. Microscopic sections are preserved, No. 109, and a drawing, A. 27.

The patient was a middle-aged man. Six years before his death, a ligature was placed upon the subclavian artery, on account of a pulsating tumour then presenting below the clavicle, and supposed to be an aneurism of the axillary artery. The preparation contains the portion of the artery which was obliterated below the seat of the ligature. The artery has been divided to show the firm coagulum of fibrin which filled it, and was closely adherent to its inner surface, to the extent of about an inch and a half beyond the ligature.

The thorax of the same patient, with the arteries injected, is preserved, No. 1409, Series VIII.

The case is recorded by Mr. Stanley, in the *Medico-Chirurgical Transactions*, vol. xxviii, p. 314. London, 1845.

2560. An Ischiatic Nerve, with a small, firm, white Tumour within its sheath. The filaments of the nerve are separated by the tumour, and loosely connected with its surface. VIII. 16

Vide No. 3283 in Series L.

SPINDLE-CELL SARCOMA.

2561. A portion of one of the Nerves of a Brachial Plexus, probably one of the roots of the median nerve, with a tumour in its sheath. It was removed, together with a portion of the internal cutaneous nerve, which lies upon it. The tumour is of an oval form, nearly an inch in length; it lies completely within the sheath of the nerve, the bundles of nervous filaments being pressed to one side; and it is composed of a pale, uniform, firm, elastic, glistening substance, which appears in one situation somewhat softened. The tumour consists of elongated spindle-shaped cells. VIII. 17

The patient was a man, about 25 years old. The tumour had grown slowly, and with much pain in the arm.

CANCER.

2562. A right recurrent Laryngeal Nerve. The mass of tissue which surrounds it consists of dense scirrhous material involving one of the cervical glands. The nerve fibres are not merely surrounded and compressed, but are separated from one another by the penetration of the cancer growth between them. The left recurrent nerve was equally involved. VIII. 19

The man from whom these nerves were removed had suffered for nine months from cancer of the thyroid body, and, secondarily, of the glands of the neck. His voice became by degrees weak and indistinct, scarcely more than a whisper, and before death he suffered from aphonia. —See *St. Bartholomew's Hospital Reports*, vol. xvii, p. 171.

FORMATION OF BULBOUS ENLARGEMENTS AFTER INJURIES OR AMPUTATIONS.

2563. The Ulnar Nerve and adjacent parts from a man, who had received a severe wound at the junction of the middle and lower thirds of the fore-arm, fourteen years before death. The nerve had been completely divided. The upper end of the nerve appears little less than its normal size, and under the microscope showed very little atrophy; about three-quarters of an inch above the point of division there is a well-marked bulbous enlargement. The lower end of the nerve is much atrophied; and was found to consist almost entirely of connective tissue, with a few axis-cylinders. The lower end of the nerve is attached to the under surface of the tendon of the flexor carpi ulnaris; its upper end to the upper and inner aspect of the same tendon. The two portions of the nerve are not on the same plane, and much scar-tissue intervened between them. There was complete atrophy of all the muscles of the hand supplied by the ulnar nerve, with contraction of the little and ring fingers. Sensation was, however, perfect in the skin supplied by the nerve.

See *Harley Ward Book*, vol. iii, p. 46.

2564. Part of a Humerus, with the several Nerves of the Arm, from a stump. The nerves present bulbous enlargements at their extremities, which are firmly united together, and to the end of the bone, by dense cellular tissue. VIII. 10

2565. Nerves of a Fore-Arm, with the bones, from a stump. The extremities of the radial, ulnar, and median nerves form very dense, bulb-like swellings, two of which are closely, and one more distantly, connected with the cicatrix in the skin. VIII. 7

2566. The first Bone of a Middle Finger, from a stump. The digital nerves present bulbous enlargements at their extremities, which are firmly united to the bone. VIII. 11

Vide also Series XLIX, Nos. 3210 to 3213.

INJURIES OF NERVES.

2567. Portion of a Radial Nerve, with the Tendons of the Flexor Carpi Radialis and Flexor Longus Pollicis Muscles. Long before death the artery was completely, and the nerve partially, divided. The divided filaments of the nerve have become firmly adherent to the two contiguous tendons. The sensibility of the fingers was unimpaired. VIII. 14

The fore-arm of the same person is preserved in No. 1410, Series VIII.

SERIES XXXIII.

DISEASES AND INJURIES OF THE EYE AND ITS APPENDAGES.

ORBIT.

2568. Portion of the Skull of the patient, whose left eye, extirpated nineteen years before death, is preserved in No. 2623. The left orbit has undergone no change either in form or size. IX. 14

TUMOURS IN THE ORBIT.

2569. A Tumour, composed of soft fibro-cellular tissue, whose lobes are so distinct and so loosely connected that they look like a cluster of gelatinous nasal polypi. XXXV. 76

It was removed from the upper part of the orbit of a man, 40 years old. It lay embedded in the orbital fat, and had been observed increasing for eighteen months.

2570. Sections of an Orbital Tumour, encircling the optic nerve. The microscopic characters of the growth were those of a sarcoma.

Prominence of the eye was noticed shortly after an injury eleven years previously, and although the eye became much protruded, vision was unimpaired.

LACHRYMAL GLAND.

HYPERTROPHY.

2571. A Lachrymal Gland, enlarged so as to form an oval mass, an inch in length and more than half an inch in width. It retains its lobular form and glandular appearance; and the disease seems to have consisted in a simple increase of the gland, without change of texture. IX. 25

The patient was a lady, 45 years old. The enlargement of the gland had made progress for several years.

TUMOURS OF THE LACHRYMAL GLAND.

ENCHONDROMA.

2572. An Enchondroma of the Lachrymal Gland. IX. 13

The patient was a gentleman, 27 years old. The disease commenced five years before the removal of the gland. In a year and a half from its commencement the globe began to protrude; and in three years, with increased displacement of the eye, the sight became im-

paired, and was at length totally lost. After the removal of the gland the eye returned to its normal position, and the patient completely recovered his sight.

2573. Tumour of the Lachrymal Gland, which was removed from the left orbit of a man, aged 28 years. The eye was displaced downwards and inwards almost upon the cheek. The tumour had been growing for nine years; its removal was easily accomplished, as it shelled out from a distinct capsule. Its structure is that of an ordinary cartilaginous tumour, in which some traces of the lachrymal gland are still evident. The small portion seen below was detached during the operation.—See *Ophthalmic Ward Book*, Male, vol. ii, p. 430, and *Pathological Society's Transactions*, vol. xxvi, p. 84.

SARCOMA.

2574. A large Tumour, and above it a shrunken and flaccid Eye. The tumour nearly filled the orbit, and a part protruded from it the size of a small egg. No portion of the lachrymal gland could be distinguished from the growth, which was of a uniform structure throughout, composed entirely of small round cells embedded in a scanty matrix—presenting, in short, the characters of a round-celled sarcoma. The tumour measures three inches in length by two in breadth. It was of slow growth, extending from its first recognition over a period of nearly two years. Increasing gradually, it distended the conjunctiva before it, and pressed upon the orbit, the sight gradually declining. Death resulted from exhaustion attendant upon old age. IX. 30

The case is reported by Mr. Savory in the *Medical Times and Gazette*, vol. xxxv, p. 188.

EYELIDS.

ATROPHY.

2575. The Eyelids, the remains of the Optic Nerve, and the other contents of the Orbit, from which the eye in No. 2625 was removed. The optic nerve terminates by a blunt, but not bulbous extremity, which is firmly adherent to the surrounding tissues. The eyelids, muscles, and all the other parts are atrophied and contracted. IX. 20

SYMBLEPHARON.

2576. An opacity of the lower segment of the Cornea, due to symblepharon after erysipelas. IX. 34

Three months previously the patient had received a violent blow on the temple, which was followed by erysipelas. Since the accident the function of the eye had been wholly lost. She suffered from frequent attacks of pain in the orbit, and at length the other eye became painful. The lower lid was adherent to the lower part of the cornea. A careful examination of the eye detected no alteration of structure.

TUMOURS OF THE EYELIDS.

DERMOID CYSTS.

2577. A Dermoid Cyst, removed entire from beneath the orbicularis muscle of a child.

CONJUNCTIVA.

PTERYGIUM.

2578. The Cornea, part of Sclerotic and Conjunctiva. Extending from the inner canthus to the margin of the cornea is a triangular fold of vascular connective tissue, known as pterygium.

CORNEA.

INFLAMMATION AND ITS EFFECTS.

2579. The anterior portion of an Eye with Pus in the anterior chamber, seen

from behind, the lens having been removed. The cornea is opaque and infiltrated with pus, and around its margin had ulcerated and given way. The eye was removed with a rapidly-growing orbital tumour, which had displaced the eye until it was no longer covered by the eyelids. There was extreme chemosis with ulceration of the cornea in consequence.

Vide No. 2645.

ULCERATION.

Vide No. 2620.

NEURO-PARALYTIC ULCERATION.

2580. A left Eye, in which there is a large ulcerated aperture in the middle of the cornea. The iris, the pupillary margin of which was adherent to this aperture, is thickened, and appears ragged, by the lymph deposited upon it. IX. 9

The patient was 40 years old, and had a tumour in the left side of the pons, which compressed the origins of the fifth and facial nerves on the same side. Some signs of this tumour had existed for more than a year. She lost sensation and motion on the left side of the face, and motion in the left arm and leg. The hearing and taste were lost on the left side; she was subject to repeated attacks of erysipelatous inflammation of the same side of the face: the left side of the interior of the nose was very vascular, and often discharged blood; finally ulceration of the cornea ensued. The case is related by Mr. Stanley, in the *London Medical Gazette*, vol. i, p. 531, 1828.

LEUCOMA.

2581. The anterior half of an Eye, in the cornea of which there is an old cicatrix, to which the iris is adherent.

STAPHYLOMA—PARTIAL.

2582. Partial Staphyloma of the Cornea.

Presented by B. J. Vernon, Esq.

2583. Staphyloma of the Cornea, the result of a large perforating ulcer occurring after measles.

The parts were taken from a child aged 12.
Vide No. 2596.

STAPHYLOMA—TOTAL.

2584. A large Staphyloma of the Cornea and Ciliary Region, the result of ulceration after small-pox.

2585. Total Staphyloma of the Cornea.

2586. Staphyloma of Cornea, the result of long-standing inflammation of the iris and ciliary region (cyclitis). The iris is thickened, and with the parts around it, covered with lymph. It is adherent to the posterior surface of the cornea.

2587. A Staphylomatous Cornea, with the remains of the atrophied iris adherent to its inner surface.

2588. Total Staphyloma of the Cornea.

Removed from a girl, aged 17; the entire cornea was said to have been opaque from infancy, but the enlargement of the globe had only been noticed for five or six years.

TUMOURS OF THE CORNEA.

2589. Portion of an Eye which was removed. The whole of the substance taken away projected beyond the sclerotic; it consists of a pale firm mass, in the middle of which is the thickened cornea. IX. 16

SARCOMA.

2590. The half of an Eye, the anterior part of which is covered by a firm

vascular tumour, which had been noticed by the patient four years before the removal of the eye. It grew from the outer side of the eye, at the sclero-corneal junction. The tumour was removed soon after its first appearance, but recurrence took place in six months, and it grew rapidly, at times bleeding a good deal. The contents of the globe were throughout normal. The growth is limited to the cornea and the subconjunctival tissue at the sclero-corneal junction; although closely attached it does not perforate the cornea. The microscope showed that the tumour had the characters of a mixed round- and spindle-cell sarcoma.—See *Ophthalmic Ward Book*, Female, vol. i, p. 204.

From a woman, aged 60 years.

TRANSPLANTATION OF THE CORNEA.

2591. An Eye from which the Cornea was removed by a small cutting trephine. The lens was allowed to escape, and the cornea from another eye was substituted for that removed, and kept in place by three silk sutures. The eye was removed seven days later on account of suppuration. The new cornea was found united to the sclerotic at the inner side, but elsewhere detached and sloughing.—See *Ophthalmic Ward Book*, vol. i, p. 230.

INJURIES OF THE CORNEA.

WOUNDS.

2592. A large irregular Wound of the Cornea, into which the Iris protruded.

From the same eye as that preserved in No. 2644.

2593. Left Eye, excised on account of injury produced by a piece of broken china. The wound, which extended across the whole breadth of the cornea, involved the ciliary region at its lower and outer part to the extent of two lines. Considerable protrusion of the iris followed. The cornea became rapidly soft and staphylomatous, vision being quite lost. On extirpation of the globe, its several structures were found to be thickened and firmly matted together by the products of inflammation. The retina was swollen and opaque. Sympathetic ophthalmia followed in the right eye nine weeks after the injury to the left.

Vide No. 2651.

SCLEROTIC.

THICKENING.

2594. The two halves of a shrunken Eyeball, showing a remarkable thickening of the sclerotic in the posterior part.

2595. The two halves of a shrunken Eye, showing great thickening of the sclerotic and formation of bone in connection with the choroid.

Vide Nos. 2648, 2656.

STAPHYLOMA.

2596. Right Eye, removed from a man, aged 35, on account of sympathetic irritation of the other eye. The eye, which is very large, especially in the antero-posterior diameter, shows a staphyloma of the cornea. There are numerous large equatorial staphylomata between the insertions of the recti muscles, and one or two also in the ciliary region. The cornea is quite opaque.—See *Ophthalmic Ward Book*, Male, vol. ii, p. 242.

2597. Numerous Staphylomatous Bulgings of the coats of an Eye. The sclerotic has been thinned between the recti muscles in those positions where the muscles do not maintain any pressure upon the eye.

2598. An Eye. On the outer and under aspect of the Globe at the equator is

a large staphylomatous bulging of the sclerotic, divided into two by the lower rectus muscle.—See *Ophthalmic Ward Book*, Male, vol. iv, p. 22.

2599. Staphyloma of the Sclerotic. The choroid has been separated from the sclerotic by fluid; the lamina fusca is much thickened, and condensed, so as to form a distinct cyst wall: the retina is detached, and encloses some shrivelled remains of the vitreous humour; some chalky tissue represents the remains of the lens.

The eye was removed from a middle-aged man on account of disfigurement, having been blind from an injury inflicted in childhood.

2600. The Eye of a man of middle age, which displays numerous staphylomata in the ciliary region. It had been the seat of irido-choroiditis, and blind for some years.

Vide Nos. 2629, 2652.

TUMOURS OF THE SCLEROTIC.

FIBRO-CELLULAR.

2601. The Eye of an Ox, on the anterior part of which is a Tumour with hair growing from it. The tumour, which appeared to be composed of fat and condensed cellular tissue covered by skin, grew from the outer half of the cornea and sclerotic. The conjunctiva appeared to be lost in the integument which enveloped the tumour. Long hairs, with true bulbs, grew from the skin on the surface of the tumour. The cornea, where not covered by the diseased growth, was transparent and of its natural thickness and structure: the iris and lens were likewise healthy. IX. 21

IRIS.

IRITIS AND ITS EFFECTS.

2602. An Eye, in which the iris is thick and opaque: a portion of it also was adherent to the cornea. IX. 3

2603. An Eyeball laid open, showing complete atrophy of the iris, with loss of the uveal pigment. The front of the iris is everywhere adherent to the cornea. IX. 33

Vide No. 2587.

2604. The anterior half of the Coats of an Eyeball turned inside out. The posterior surface of the iris is completely covered with flocculent lymph.

The patient, aged 45, had long been under observation for chronic iritis. The eye was removed on account of constant and severe pain. The choroid was healthy.

Vide Nos. 2580, 2586, 2661, 2662.

ANTERIOR SYNECHIA.

2605. An Eye, in which the greater part of the pupillary margin of the iris is adherent to the cornea. IX. 1

Vide Nos. 2581, 2602, 2603.

TUMOURS OF THE IRIS.

2606. The specimen shows a brown nodular growth, connected only with the

anterior surface and pupillary margin of the iris. Under the microscope a section showed numerous stellate pigment cells. There were visible also delicate fibres and variously shaped cells, some of them with nuclei and nucleoli. Both irides were grey and speckled with irregular patches of the same brown colour as that of the tumour.—See *Ophthalmic Ward Book*, Female, vol. i, p. 202.

2607. An Eye, showing multiple growths upon and within the iris and ciliary processes.

From a little girl, aged 4 years. She had for two years been under treatment on account of disease of the hip-joint; but no change had been observed in the eye until within a few weeks before her admission into the Hospital. Treatment proving of no avail, the eye was removed.

Under the microscope the growths appeared to be composed of small nucleated cells with a distinct fibrillated stroma (? tubercle); the larger masses containing, in addition, some stellate cells more or less pigmented, and the remains of iris tissues.—See *Ophthalmic Ward Book*, Female, vol. i, p. 240.

2608. The anterior half of an Eye divided by a median vertical section. A white soft rounded growth, about the size of a pea, springs from the lower segment of the iris and projects into the anterior chamber. The pupil is slightly displaced upwards, irregular, and there are tags of adhesion to the capsule of the lens. Pink vessels ramified over the surface of the growth in the recent state. A mass of corresponding size projects backward in the ciliary region: it is internal to the ciliary processes.

Microscopic Examination.—The growth consists of small round nuclei in a delicate matrix of connective tissue. It is probably a round-cell sarcoma. From a boy, aged 5 years. The pupil was fixed and did not dilate under atropine. The vision was impaired but not lost. The fundus could not be illuminated. The boy's father observed that he possessed a peculiar liability to suppuration after very slight injuries, as, for instance, a bruise. He had had scarlet fever two months before admission to the Hospital.

Microscopic sections are preserved, No. 110.

CHOROID.

CALCAREOUS DEGENERATION, AND FORMATION OF BONE.

2609. Portion of the Eye of a girl, aged 16. The sight of the eye had been lost from inflammation during infancy. The retina has been removed. The choroid coat which has lost its pigment is seen to be dotted with small granules—the so-called colloid degeneration of the elastic membrane of the choroid. These isolated deposits undergo earthy degeneration, and by their coalescence form the plates of bone occasionally met with.

2610. The posterior half of an Eye, removed from a woman, aged 35. It contained a shallow cup of bone, rather more than half an inch in diameter and one-eighth of an inch thick. There is a small central opening in the cup through which the detached retina, reduced to a mere fibrous cord, passed.

The sight of the eye had been completely lost in consequence of erysipelas in childhood.

2611. Eye of a child, aged 3 years. The eye had been blind since early infancy from the effects of purulent ophthalmia. The entire cornea was opaque. The lens is coated with a thin shell of white earthy material. The vitreous body is much shrunken; the retina has become completely detached from the optic nerve. A small pyramidal piece of bone-like material has been formed at the point of separation, between the retina and choroid.

The eye was removed on account of sympathetic iritis in the other eye.

2612. Section of an Eye, which is occupied by a hollow sphere of bone. On the outer surface of this the choroid is still visible; on the inner surface are the flocculent remains of the retina and vitreous humour. IX. 10

2613. A small Eye, containing a complete cup of bone, which lies between the choroid and the retina; the latter is detached. The lip of the cup is at the ciliary region.

Removed from a woman, aged 24 years. The eye became inflamed after vaccination, when she was about two years old, and the sight was destroyed. She stated that there had always been some pain in the eye, but during the last month she had suffered severe pain in the corresponding temporal region; at the same time the opposite eye had become painful and gradually weaker.—See *Ophthalmic Ward Book*, May, 1880.

2614. An Eye, which had been blind many years, the result of an injury, and which had become the seat of intense neuralgic pain. Removed from a man of middle age. The entire globe was much shrunken. The sclerotic was the only coat which retained a natural appearance. The entire contents of the globe have become massed together into a solid ball of earthy and bone-like material. Around the front of this the remains of the ciliary processes are still apparent.

2615. A degenerated Eyeball, removed on account of sympathetic inflammation in the other eye. The sclerotic has been reflected. The lens is white and of a chalky hardness. Immediately around the entrance of the optic nerve, which is small, there is a plate of bone-like material.

Vide Nos. 2595, 2654.

CHOROIDAL HÆMORRHAGE.

2616. The two halves of an Eye, showing extensive effusion of blood between the choroid and sclerotic coats.

2617. Specimen showing hæmorrhage into the vitreous, and consequent dislocation of the lens into the anterior chamber.

The patient was a woman, aged 26. Selerotomy was performed to relieve tension, the eye being partially disorganised and presenting a well-marked ciliary staphyloma. After the operation, increasing pain in the eye necessitated excision on the fifth day.

2618. Intra-ocular Hæmorrhage, with detachment of the retina and thinning of the sclerotic, the consequence of choroiditis and progressive myopia.

2619. Intra-occular Hæmorrhage. The eye is filled with firm blood-clot divided into two unequal portions by the detached retina. The blood seems to have been poured out between the sclerotic and choroid, as the result of injury.

2620. An Eye, which is filled by a laminated blood-clot. The clot protrudes in a button-like form through the ulcerated cornea.

Removed from a woman, aged 61. It was the seat of chronic glaucoma, for which iridectomy was performed. The cornea ulcerated, and the protruding blood-clot gave rise to the suspicion of the existence of an intra-ocular tumour.

2621. Intra-ocular Hæmorrhage. The choroid and retina are detached from the selerotic; no trace either of the vitreous humour or of the lens remains. The space between the coats was filled with firm recent blood-clot, a part of which has been removed. The eye, which had been glaucomatous for some months, was removed from a man, aged 56, on account of sudden increase of size and intense pain.

TUMOURS OF THE CHOROID.

SARCOMA.

2622. Section of a Choroidal Tumour found in the eye of a woman, aged 38. The eye had been blind, it was said, in consequence of a blow, for some weeks. Symptoms of glaucoma set in, for which iridectomy was performed, but without permanent benefit.

The growth is a firm spindle-celled sarcoma, and appears to have developed from the choroid immediately behind the ciliary region; it did not contain pigment.

2623. Section of a Tumour, which was removed with the Eye of an adult. The tumour consists of a mass of soft, greyish, medullary substance, some of which is within the globe, but the greater part, having protruded through the sclerotic, has enlarged, and extended round the exterior of the globe. Portions of the choroid membrane and retina may be discerned, apparently unchanged. The retina is reflected over that part of the tumour which is within the globe, indicating that the tumour grew between the retina and choroid. IX. 6

The woman from whom this specimen was taken lived for nineteen years after the operation, and the disease did not return. Part of her skull is No. 2568 in this Series.

2624. Sections of a Tumour, which was removed from the cavity of the orbit with the eye and optic nerve. The tumour adheres to the sclerotic over its entire external surface, the elongated optic nerve passing through its axis. It is lobulated, firm, compact, and of a light yellow colour. The recti muscles unaltered, adhere to it externally. The eye was protruded from the orbit. The tumours have escaped through an ulcerated aperture in the cornea. The sclerotic is natural, but the retina and choroid at the point of section are detached from it, and the space left is occupied by a clot; blood is also effused into the optic nerve. IX. 12

2625. An Eye, which was removed from a middle-aged man. The tissues of the anterior and inferior third of the eye are occupied by an irregular growth of firm and very vascular substance, with a granulated, warty, and vascular surface. The optic nerve, of which a portion is preserved, is sound. IX. 17

There was no return of disease in the orbit; but the patient died with medullary tumours in the heart, and in some other parts, two years after the extirpation of the eye. His skull is preserved in Series I, No. 78; part of his dura mater in Series XXX, No. 2456; his optic nerve in this Series, No. 2575; and his heart in Series VII, No. 1292.

2626. An Eye, with which a large brain-like Tumour is connected. The tumour has protruded to a considerable distance through the eyelids, which it has completely inverted and pushed back into the orbit. Its anterior part is covered with shreds of soft sloughing tissue. The eye is filled with the diseased structure, but the sclerotic is shrivelled and contracted. The optic nerve is sound. IX. 19

The parts were removed after death. The disease had existed for more than two years, and was associated with similar growths in the scalp and bones of the skull.

Presented by Martin Ware, Esq.

2627. The extirpated contents of an Orbit. The position of the diseased eyeball may be recognized by that of the optic nerve, and of a funnel-shaped cavity lined with a brownish membrane, the remains of the choroid. The globe is occupied by a new growth, which has protruded through the sclerotic. IX 27

The patient was 25 years old. The disease had existed nine months. After several months' duration, the eye began to protrude, and the protrusion constantly increased, completely everting the conjunctiva and producing extreme suffering. The patient remained well for at least two years and a half after the extirpation.

2628. Antero-posterior section of an Eye completely filled by a pink, tolerably firm, fleshy growth, which protrudes through the anterior part. The growth appears to be enclosed by the remains of the choroid. Its microscopic characters are those of a spindle-cell sarcoma.

From a man, aged 38, who in infancy lost the sight of the eye from purulent ophthalmia. He first noticed the growth nine months before his admission to the Hospital, and was then obliged to desist from wearing an artificial eye. The eye had apparently not grown since childhood.

MELANOTIC SARCOMA.

2629. Sections of an Eye, of which the Globe is almost completely filled by a mass of medullary and melanotic substance. The diseased growth appears to have originated between the choroid membrane and the retina. The former still surrounds it; the latter, entire but pressed to one side of the eye, is exhibited in the upper part of the preparation. The lens is pressed forwards into contact with the inner surface of the cornea; the iris forms a narrow ring around its margin. At the back of the preparation are two considerable staphylomatous projections of the sclerotic, which, before the removal of the eye, were observable at the lower and outer part of the front of the globe. IX. 18

The patient was a girl, 20 years old. The disease had existed more than six months, and for three months its progress had been attended by extreme pain. She remained well for three years after the operation. Then, melanotic disease was developed in the liver, heart, and many other parts; but the disease did not return in the orbit. A portion of her heart is in Series VII, No. 1290; and her pancreas in Series XXIII, No. 2270. The case is related by Sir Wm. Lawrence in a Clinical Lecture in the *London Medical Gazette*, vol. xxxvi, p. 961. London, 1845.

2630. Melanotic Sarcoma of Choroid. The posterior half of the eye is shown. The lower and inner thirds of the cavity of the globe are occupied by a melanotic mass which springs from the choroid. The upper and outer third of the choroid is healthy. The retina was detached, and lay in the anterior half of the globe. On the inner side the growth has passed through the sclerotic. The tumour shown, which lay in the apex of the orbit, was connected with this outgrowth; the optic nerve is imbedded in its outer side.

The patient was a collier, aged 54 years.

2631. Melanotic Sarcoma of the Choroid. The entire globe is filled with a densely black growth, which has destroyed almost every trace of the normal structures. The growth has made its way through the coats of the eye at their posterior aspect, and the orbit was filled by a similar morbid material.

The eye was removed from a man, aged 25. It had become blind soon after an injury in very early life, but had only become enlarged and painful about six months previous to the operation.

2632. Sections of an Eye, which is filled by a soft medullary and melanotic substance, of mingled shades of dusky grey and black, which has also protruded through the back part of the sclerotic, forming a nodulated elevation by the side of the optic nerve. The optic nerve is reduced in size, but appears otherwise sound: the lens and iris are pressed against the cornea. IX. 8

The patient was a man, 30 years old, and the disease had been about two years in progress: the globe was slightly enlarged by the growth within it. A year after the extirpation of the eye, the patient was in good health. The case is related by Sir Wm. Lawrence in his "Treatise on the Diseases of the Eye." London, 1844, 8vo, p. 719.

2633. Sections of an Eye, with its Globe nearly filled by a medullary and melanotic growth, which also protrudes through the upper and anterior part of the sclerotic, and forms, externally to the eye, a mass larger than the eye itself. The part of the tumour within the eye is nearly black: that, which is external

to it, is white and variously shaded with grey and black. The brain of the same individual is preserved in Series XXX, No. 2498. IX. 23

2634. An Eye filled with soft melanotic sarcoma. A large nodular mass of the growth has protruded through and overgrown the cornea and the antero-inferior part of the sclerotic. Most of the tissues of the eye are involved in the disease, but it appears to have had its primary seat in the choroid. IX. 28

2635. The Eye of a man, aged 40, showing a melanotic sarcoma, which had penetrated through the posterior part of the globe into the orbit. It commenced, and was recognised with the ophthalmoscope, about a year before its removal, as a growth from the choroid.—See *Ophthalmic Ward Book*, Male, vol. iii, p. 84.

2636. A Melanotic Sarcoma of the Choroid, which protruded through the posterior surface of the globe into the orbit.—See *Ophthalmic Ward Book*, Female, vol. iii, p. 314.

2637. Sarcoma of the Choroid. A tumour springs from the choroid on the inner side of the disc. The retina, extremely thinned, can be traced over its surface. The tumour was found on microscopic examination to be composed chiefly of round cells, with, in places, an admixture of spindle-cells. Most of the cells contained pigment.

The eye was removed from a man, aged 63.

2638. Sections of a mass of Melanotic Sarcoma removed from a man's orbit. The remains of the eye were included in the mass, but the growths within and without the globe are so confused that none of its parts can be now discerned. The lower part of each section is covered with the everted and partially ulcerated palpebral conjunctiva. IX. 29

The patient was 44 years old. This disease had been in progress for about eight months, but the eye had been atrophied for nearly twelve years previously, in consequence of acute inflammation after injury. The disease completely filled and protruded from the orbit. It was freely removed, but in two months it recurred, and five months afterwards proved fatal.

No. 394 is a drawing of the specimen in its recent state.

2639. Sections of a large lobulated Tumour, which was removed from the cavity of the left orbit of an adult; and a portion of Brain, from the same individual. To the upper part of the sections of the tumour is attached the posterior half of the eyeball: this is filled by a substance similar to that of the tumour, so that it may be assumed that the tumour began to grow within the eye and protruded through its anterior part. The tumour is, throughout, soft and brain-like in its texture; parts of it are nearly white, and parts are intensely black. It appears also to have been very vascular. In the lower part of the bottle is a portion of the tumour which was extracted from the back part of the orbit: it consists of the same substance as that already described. The optic nerves are connected with the portion of brain; the left nerve has some of the medullary and melanotic substance attached to it: it is reduced in size as far as the commissure; but beyond this, no change is visible in it. IX. 7

The patient was an unhealthy man, 65 years old. The disease had existed about twelve months. He died ten days after the extirpation of the eye; and melanotic disease was found in the liver, sections of which are preserved in Series XXI, No. 2212. The case is related by Sir Wm. Lawrence in his "Treatise on the Diseases of the Eye." London, 1844, 8vo, p. 720.

LENS.

DISLOCATION.

2640. An Eyeball, which was removed on account of severe pain. The retina is completely detached, and the opaque lens had fallen from its proper position

downwards and forwards, pressing against the ciliary processes, and the back of the iris.

CATARACT.

BLACK.

2641. The Nucleus of a very dark Lens, removed by operation from a man, aged 56.

CONSECUTIVE.

2642. Cataract. The anterior chamber is obliterated; the iris is in close contact with the cornea. The patient had long suffered with iritis, and the eye was quite blind. Excision was performed on account of very severe ciliary neuralgia.

PYRAMIDAL.

Vide No. 2669.

CALCAREOUS DEGENERATION OF THE LENS.

2643. A shrunken and degenerated Eye, the result of an old injury. The lens has undergone calcareous degeneration. The eye was removed on account of inflammation of the opposite globe.

Vide No. 2615.

VITREOUS HUMOUR.

INFLAMMATION AND ITS EFFECTS.

2644. The Eye of a man, showing suppuration of the vitreous humour, caused by a fragment of a chisel, which was found within it, and which had produced the rusty discoloration observable.

2645. Suppuration of the Retina. This structure is everywhere much thickened, infiltrated with pus, and partially separated from the choroid, which is little changed. The lens has disappeared; the anterior chamber contains pus. When the section of the globe was made a large quantity of pus escaped from the vitreous.

Removed from a boy, aged 11, ten days after a blow with a stone.

2646. The half of an Eye. The entire contents of the globe had become converted into one uniform mass of cheesy consistence. A layer of the substance lines the anterior chamber. A dark line running across the eye seems to mark the situation of the choroid and retina, which have been detached and driven forwards. Posteriorly it is hard to define the sclerotic, it being so blended with the contents of the globe.

From a girl, whose eye became blind during convalescence after measles.

2647. The Eye of a man, which had been blind for many years after prolonged inflammation. The vitreous humour is solid and shrivelled into a nodulated mass of firm earthy material. The retina is *in situ*, and seems to be rendered opaque and irregularly thickened by a similar material. The choroid is in a similar condition. Probably the result of suppuration.

2648. A shrunken Eye from a boy. The lens formed a round mass of degenerated tissue, of cartilaginous hardness. The place of the vitreous humour is taken by dense white fibrous tissue, with soft yellowish patches here and there. The choroid is in its proper position, but no trace of retina could be found. The sclerotic is much thickened and crumpled posteriorly, but is otherwise normal.

—See *Hospital Reports*, vol. vii, p. 181; *Ophthalmic Ward Book*, Male, vol. i, p. 250.

HYDATID IN THE VITREOUS HUMOUR.

2649. The half of an Eye, removed from a man, aged 45, which had been blind for some years, and very painful at intervals. The posterior half of vitreous cavity was occupied by a cyst with a very firm thick wall, the contents of which had undergone suppuration. Floating in the pus was a hydatid. The choroid is *in situ*; there are no traces of retina or vitreous humour, but the cavity of the globe anterior to the cyst contained flocculent shreddy material, in all probability made up of remains of vitreous and detached retina. The cyst walls are very thick, and when cut were as firm as layers of cartilage. They were composed of firm fibrous tissue.

FOREIGN BODIES IN THE GLOBE.

2650. An Eye, containing a gun-cap, removed from a girl who was employed in cartridge making. The foreign body entered the globe at the outer and upper part of the sclero-corneal junction. The cap lies in the midst of broken-down blood-clot and detached retina. The eye was quite blind and intensely painful. The larger wound in the sclerotic was made after the eye was removed.

2651. An Eye, showing a fragment of metal lodged between the retina and choroid, about a quarter of an inch above the optic disc. A white speck on the cornea shows where the foreign body had entered the eye.—See *Ophthalmic Ward Book*, Male, vol. iv, p. 68.

RETINA.

RETINITIS PIGMENTOSA.

2652. An Eye, removed from a middle-aged woman, which had been blind for a long period, and had of late become extremely painful. Before removal there was a large equatorial staphyloma. Around the equator of the fundus is a band of pigmented retina (Retinitis pigmentosa) one-fifth of an inch in breadth. With a lens the pigment appeared to be situated in the substance of the retina in the form of a network of caudate cells. Corresponding to this portion of the retina, the pigmentation of the choroid was disturbed, and appeared as if it were honeycombed. The choroid was closely attached to the retina everywhere, without any effusion between them.—See *Ophthalmic Ward Book*, Female, vol. iii, pp. 179 and 429.

2653. The posterior half of an Eye, showing general atrophy of the cornea, and deposit of pigment in the retina.

From a woman, aged 50 years. The eye had long been blind and was removed on account of pain.

DETACHMENT OF THE RETINA.

2654. Section of an Eye, which shows complete detachment of the retina. The lens is shrivelled up and calcareous. A layer of bone is developed between the choroid and retina.

2655. Complete detachment of the Retina from effusion between it and the choroid, the result of an injury four years previously.

Removed from a man, aged 45 years.

2656. Complete detachment of the Retina. The retina is contracted into a yellow, opaque, pyramidal-shaped mass, containing the remains of the vitreous humour. The sclerotic is very remarkably thickened.

The eye was removed from a child, who had become blind after purulent ophthalmia.

2657. Complete detachment of the Retina. The sight of the eye was lost by an injury fifteen years before its removal, which was rendered necessary by severe pain.

2658. An Eye, in which the Cornea is very small and opaque. The lens and vitreous humour have entirely disappeared. The choroid is thickened; and the retina, collapsed, forms a cord extending from the entrance of the optic nerve to the surface of an irregular mass of tissue which occupies the former situation of the lens. IX. 2

2659. Detachment of the Retina. This structure has been completely detached in the form of a funnel, by effusion between it and the choroid. The choroid itself is opaque, and its pigmentary layer is atrophied in places, the result of long standing inflammation. The eye had been blind for some years. It was not itself the seat of pain, but was removed on account of sympathetic inflammation of the other eye.

2660. Complete detachment of the Retina by extravasation of blood between it and the choroid. The detachment is complete. The surface of the membrane is covered with tawny-coloured material, probably old decolorised blood-clot. The choroid is dotted here and there with small white patches the results of inflammation. No history could be obtained, but the eye, which was much enlarged, had suddenly become very tense and painful.

2661. A similar specimen. The eye had been treated for some months for chronic iritis, when it was accidentally injured by a blow. It was removed soon after on account of severe pain.

The patient was a man, aged 39 years.

2662. Partial Detachment of the Retina. This structure has become detached from the choroid coat for three-fourths of its extent; while immediately around the entrance of the optic nerve the two coats are fastened to each other by tough fibrous adhesions. The eye had been blind for some years; it was removed from a woman, aged 45, who had suffered from secondary syphilis. The other eye was much impaired by old iritis and choroiditis.

TUMOURS OF THE RETINA.

2663. Glioma of the Retina. The globe is completely filled with a soft white spongy-looking growth which contains many gritty particles—the results of calcareous degeneration. The posterior part of the globe is surrounded by a similar formation which, however, has suffered no appreciable degeneration. No trace of the natural structures within the eye remains. Under the microscope the tumour was found to consist almost entirely of nucleated cells, of uniform size, without inter-cellular stroma, but with many new blood-vessels ramifying amongst them. The small earthy particles consist of carbonate of lime.

From a child, aged 2½. The growth had been observed for seven months before its removal.

Presented by B. J. Vernon, Esq.

2664. The Eye and Optic Nerve of a child, about 4 years old. The globe of the eye is completely filled with a soft glioma. The lens is pushed forwards into contact with the cornea. The optic nerve is, in its whole length, surrounded by the growth, and at the commissure, a larger mass was imbedded in the base of the brain. IX. 26

2665. Glioma of the Retina around the termination of the optic nerve, and implicating the optic nerve itself for a considerable distance.

From a child.

2666. Section of a Tumour, which filled the orbital cavity of a young subject. The tumour is a soft glioma, containing patches of extravasated blood. The eye and optic nerve are imbedded in the centre of tumour, and are themselves so filled with the new-growth that no portion of the natural structure of the eye, except the sclerotic, can be distinguished. IX. 4

2666a. A Glioma of the Retina. A vertical section through the optic nerve and eye-ball shows a firm lobular growth of a white colour, commencing at the entrance of the optic nerve, and filling the greater portion of the inferior two-thirds of the vitreous chamber, the remaining third being filled with recent flocculent lymph. The growth consists of two lobes, in distinct portions, the smaller and posterior of these, springing from the entrance of the optic nerve, has driven the choroid before it, and perforating this has spread out into the vitreous chamber as far as the posterior aspect of the lens. No trace of the retina remains. The lens was in its normal position, but has been lost. The eye was removed from a boy, aged 10, and the disease had not attracted attention until seven weeks previous to the operation.

2667. An Eye, from which all the natural structures have disappeared, giving place to a mass of whitish medullary matter. The recti muscles are connected with the upper part of this mass. IX. 5

Vide No. 3297 in Series L.

OPTIC NERVE.

ATROPHY.

Vide Series XXXII, Nos. 2551 to 2554, and Series L, No. 3218.

TUMOURS OF THE OPTIC NERVE.

GLIOMA.

Vide Nos. 2664, 2665.

MELANOTIC SARCOMA.

Vide No. 2639.

CHANGES IN THE OPTIC NERVE AFTER EXCISION.

2668. The remains of the Optic Nerve, with some of the surrounding tissues, from the patient whose eye is described in No. 2629. The sheath of the optic nerve is laid open, displaying the nerve contracted within it, pale and shrivelled, and with no bulbous enlargement at its extremity. IX. 22

Vide No. 2575.

ALTERATIONS IN THE SHAPE AND SIZE OF EYE.

ELONGATION FROM MYOPIA.

Vide Nos. 2596, 2618.

GENERAL ENLARGEMENT.

Vide Nos. 2582, 2588.

MICROPHTHALMOS.

2669. An extremely small eye removed from a girl, aged 18. When a baby the eyes were of equal size. The eye was quite blind and had latterly given her considerable pain, for which it was removed. The cornea is turned back to expose the pupil filled with a pyramidal cataract.

SERIES XXXIV.

DISEASES OF THE EAR AND ITS APPENDAGES.

2670. An external Ear, the seat of a large growth of epithelioma. The disease occupies the whole thickness of more than half the auricle, projecting alike on its external and internal surfaces, and leaving only its upper and anterior borders and the lobule free. It forms a flat, lobed, and fissured growth, the overhanging margins of which are, in parts, sinuous, and have everted the adjacent skin of the auricle. The middle of the posterior border of the auricle is, with part of the cancer, completely destroyed by ulceration. The general texture of the cancer is soft, shreddy, and very vascular; the microscopic structure was well marked, according to the type of epithelioma. x. 8

A small superficial ulcer, with a scab, had existed on the outer surface of the ear for six years, the scab being frequently detached and removed. The growth here shown had been in progress of increase and ulceration for six months before it was removed. The patient was a strong man, 76 years old.

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2671. A portion of a Temporal Bone showing cerumen in the external meatus. x. 20

INFLAMMATION OF THE INTERNAL EAR, AND ITS EFFECTS.

PERFORATION OF THE MEMBRANA TYMPANI.

2672. The petrous portion of a Temporal Bone. The membrana tympani is thickened, and there is a small perforation in front of the lower end of the handle of the malleus. The mucous membrane of the tympanum was thick and red, binding together the ossicula, and preventing their free movement. The cavity was filled with viscid mucus. The upper wall of the tympanum is much thicker than usual. The labyrinth is healthy. x. 13

From an adult male who died from tubercle in the brain.
Vide Nos. 2678 and 2679.

DRIED MUCUS, AND MEMBRANOUS BANDS IN THE TYMPANUM.

2673. Part of the petrous portion of a Temporal Bone, showing the cavity of tympanum intersected by thin bands, probably dried mucus. x. 11

2674. The petrous portion of a Temporal Bone, showing membranous bands in the tympanum and mastoid cells. x. 14

2675. The petrous portion of a Temporal Bone. The cavity of the tympanum is intersected by bands. x. 17

TYMPANIC ABSCESS.

2676. Section through the right Temporal Bone, exposing the mastoid cells and tympanum. The membrana tympani is destroyed. The tympanum and mastoid

cells were filled with pus. At the junction of the posterior surface of the petrous with the mastoid bone there is a small opening, marked by a piece of wire, through which pus passed from the mastoid cells to the under surface of the dura mater, where a small collection was found. An abscess was also found in the right half of the cerebellum, and the right lateral sinus contained a thrombus.

From a girl aged 16 years, who was attacked with ear-ache and otorrhœa seven days before her death, which took place from meningitis. A year before she had a similar attack of ear-ache, which was relieved by a profuse discharge of pus from the ear.—See *Hope Ward Book*, vol. vii, p. 455.

CARIES OF THE TEMPORAL BONE.

2677. A Temporal Bone, in which ulceration has extended from the meatus auditorius externus, through the greater part of the base of the petrous portion of the bone, and has destroyed nearly all the cavity of the internal ear. x. 2

2678. Portion of the left Temporal Bone of a young man. A section has been made along the meatus auditorius externus, and through the cavity of the tympanum. The membrana tympani is very much thickened, and there is an ulcerated aperture near its anterior margin, through which a bristle is passed into the cavity of the tympanum. Another bristle is passed through a passage formed by ulceration, which leads from the tympanum to the anterior surface of the petrous portion of the temporal bone, and is thence continued through an aperture in the adjacent part of the squamous portion. x. 5

The patient had purulent discharge from the ear for many years. Two days before his death, after having long suffered from intense headache, he was suddenly affected by paralysis of the right leg; then of the right hand; and he gradually became comatose. Pus was found in the cavity of the cerebral arachnoid; and the longitudinal, lateral, and petrosal sinuses were full of lymph and pus.

2679. Portions of two Temporal Bones. The right tympanic cavity is laid open, and a bristle is passed into a mass of firm, originally whitish, tubercular matter, which is adherent to the outer wall. A similar, though originally softer, material, completely fills the left tympanic cavity; over this the bone had perished, as seen in the preparation. The softened deposit escaped externally, partly through a small opening in the membrana tympani, and partly through a passage formed in the bone just above the mastoid process. The outer table of the temporal bone is rough in consequence of an extensive exfoliation of the superficial layer.

See *St. Bartholomew's Hospital Reports*, vol. xii, p. 53.
Vide Nos. 2676 and 2684.

MORBID GROWTHS IN THE EAR.

POLYPI.

2680. Section of an Ear, exhibiting a growth of substance, like firm granulations, springing from the membranous lining of the tympanum. A portion of the growth is firmly adherent to the membrana tympani. x. 1

2681. A Polypus, which was removed from the inside of the meatus auditorius externus. Part of its surface is smooth; the rest is nodular and warty. x. 3

2682. A similar, but smaller, specimen. It is suspended by the narrow pedicle which appears to have passed through a perforation in the membrana tympani. x. 4

2683. Part of a Temporal Bone. The external auditory meatus is opened from the front and below, so as to expose a long, soft, gelatinous polypus, the base

of which is attached to nearly the whole outer surface of the tympanic membrane, and it almost fills the meatus. A bristle is passed under a slender band of false membrane, extending from the inner surface of the tympanic membrane to the opposite wall of the vestibule. The tympanic membrane is thickened. x. 7

2684. A pedunculated Polypus, removed from the ear of a boy, aged 15 years. There was well-marked caries of the external auditory meatus. x. 24

2685. A Polypus, which was removed from the meatus of the right ear of a man, aged 25 years, where it had been growing some months. x. 22

2686. The petrous portion of the Temporal Bone. From the orifice of the meatus auditorius internus there projects a growth, partly solid, partly cystic, over which the fibres of the auditory nerve are stretched. The bone is absorbed around the mass, and the cerebral substance was depressed by it. x. 23

From the body of a woman, aged 54 years, who had been insane for many years. She had been deaf on the affected (left) side, and had suffered very severe pain over the whole of the left side of the head.

SERIES XXXV.

DISEASES AND INJURIES OF THE SKIN AND ITS APPENDAGES.

HYPERTROPHIES.

CORNS (Clavus).

2687. The Second Toe from each Foot. On the anterior extremity of one there is a large corn. Over the interphalangeal joint of the other there is a corn, and beneath this a bursa. The extensor tendon of these toes was contracted, and had long drawn them up, so that the anterior extremity of the one, and the articulation of the other, were subject to greatly increased pressure. They caused, in their deformed condition, so much pain, that they were amputated.

2688. Portion of a Foot, upon which there are two corns. The cuticle has been separated. In each corn the cuticle is thick and horny; and from one of them a short horny growth projects outwards. The cutis beneath the corns is thickened and very vascular. XI. 21

2689. Section of a Foot, upon which a corn was situated over the ball of the great toe. The cuticle is removed to show that the disease is confined to a thickening of that part. The cutis beneath the corn is natural, except that its vascularity is increased, and its surface impressed. XI. 4

ICTHYOSIS.

2690. Horny epidermal masses from a case of Icthyosis Cornea. The Casts 146 and 147 were taken from the same patient.—*Vide* also Cast No. 145.

HORNS.

2691. A curved Horny Growth, with the portion of Scalp from which it grew. A section of the growth at its base shows that it here consists of a soft white substance, which, in the recent state, resembled the contents of a cutaneous encysted tumour; the rest of the growth is hard, coarsely fibrous, fasciculated, and of a dull greyish colour. XI. 16

2692. Portions of the Horny Growth, which were removed at various times before the removal of that last described. XI. 17

The patient was an old woman. The horn had been growing for some years before it was removed. The patient herself removed the portions contained in No. 2692.

2693. A Horn-like Growth divided by a vertical section, which was removed from the thigh of a woman, aged 30. It is composed of laminæ of condensed epithelium, which have separated since the specimen has been placed in spirit, so as to show the structure more plainly. It had existed for ten years. XI. 42

ELEPHANTIASIS.

2694. Section of the upper part of a Leg affected by Elephantiasis. The posterior tibial nerve is seen lying at the bottom of a longitudinal incision at the back of the limb, enormously enlarged. The enlargement is due to hypertrophy of the connective tissue of the nerve.—For a full description, see *Transactions of the Pathological Society*, vol. xxvi, 1875.

Presented by Dr. Newman, of Stamford.

2695. Section of a portion of a Leg affected with Elephantiasis.—*Vide* Casts Nos. 150, 151, 152.

From the collection of J. R. Farre, M.D.

Vide No. 2818.

ELEPHANTIASIS GRÆCORUM (Leprosy).

Vide Casts Nos. 148, 149.

KELOID.

2696. Section of a Leg, in which the integument of the sides of the foot and the back of the leg was extensively affected with keloid. The diseased integument is gradually raised from one quarter to half an inch above the surrounding healthy level, and presents a tuberculated surface. Its outline is irregular, and about its borders, which are smooth and shelving, are a few small, scattered nodules. A section through the diseased structure shows that the change consists in circumscribed thickening and induration of the integument, with production of very tough and compact fibrous tissue. The surface of the nodules is highly vascular, and, in some parts, ulcerated. The other structures of the leg appear healthy. The other section of the leg is in the Museum of the Royal College of Surgeons. Nos. 403, 404, are drawings of the leg taken during life. XI. 38

The patient was 25 years old. The disease followed scalding with hot oil. The scalded parts were not healed till seven months after the injury. The scars began to "grow up" about a month after their completion; eight months afterwards the limb was amputated.

2697. A small Keloid, removed from the inner surface of the thigh, four inches below Poupart's ligament. It grew from the scar of a scald, and had been noticed six months.

The patient was a child, aged 11 years.—See *Lucas Ward Book*, vol. vii, p. 73.

2698. A similar enlarged and indurated Cicatrix, formed after the healing of a burn on the back of a young girl. A section shows that the cicatrix consists of a very dense, tough substance, in which shining white bands are interwoven in a course network in a greyish tissue, closely resembling the substance of a fibrous tumour. XI. 33

2699. Portion of Skin removed from the Neck. It includes an elevated cicatrix which formed after the healing of a burn. A section of the diseased part shows that it consists of a dense fibrous tissue. XI. 22

Vide No. 3267, Series L, and the Cast No. 153.

MORPHŒA (Keloid of Addison, Seleroderma.)

Vide Casts Nos. 154, 155.

PIGMENTARY CHANGES.

2700. Portions of pigmented Integument, from the body of a youth, who died with extensive disease of the supra-renal capsules.—See *St. Bartholomew's Hospital Reports*, vol. vi, p. 565; also Drawings, Nos. 407, 300. XI. 20.

CUTANEOUS ERUPTIONS.

ECZEMA.

2701. Scales of Epidermis from a case of general eczema exfoliativum.

The patient was an old Irish woman. Under the use of simple remedies and warm alkaline baths she speedily recovered.—See *Faith Ward Book*, April, 1872.

For Specimens of other Eruptions, vide Casts, Nos. 156 *to* 168.

EXANTHEMATA.

2702. Epithelial Cast from the Foot in a case of scarlet fever. 210

From the collection of J. R. Farre, M.D.

2703. Portions of a Foot, exhibiting in the cuticle and cutis the appearances produced by small-pox pustules. XI. 20

Presented by Richard Partridge, Esq.

ULCERS.

2704. Section of a Heel. Over the prominence at the back of the os calcis there is a circular ulcer as large as a shilling piece, at the bottom of which the bone is exposed. From a limb which had lain for six weeks on a back splint, for the treatment of a severe fracture, which ultimately necessitated amputation.

VARICOSE.

Vide Model No. 169.

MORBID GROWTHS.

FIBROUS GROWTHS.

2705. A large round pendulous Growth removed from the end of a Nose. A section of the growth shows that it is soft and elastic, and consists of compact, obscurely fibrous, tissue like the outer layers of healthy skin. Bristles are introduced into the orifices of several enlarged hair-follicles on the surface of the growth. XI. 18

2706. An overgrowth of Skin removed from the end of a Nose. It resembles the preceding, except in having a darker surface. XI. 37

2707. This oval Tumour was removed from the nape of the neck of an African, aged 28, where it had been growing for upwards of two years. It is of a dense uniform fibrous texture throughout, continuous with the corium, which in that region is remarkably thick, and possesses the same structure. Imbedded in its substance, and penetrating to the deepest part, are numerous hair-bulbs. XI. 44

PAPILLOMA, AND OTHER WARTY GROWTHS.

2708. Part of a Warty Growth on the Skin. The cuticle is in part separated and turned downwards, to show that it is greatly increased in thickness. XI. 3

2709. A large mass of Warts, removed from the margin of the anus. XI. 2

2710. A portion of Skin from a Leg. The most obvious characters of the disease are due to small, round, or polygonal nodules of diseased cuticle, very closely arranged, so as to give a tesselated character to the surface. The subjacent cutis, exposed by the removal of some of the nodules, is rough, hard, and covered by a thin layer of cuticle. XI. 28

2711. The Great Toe of the same patient similarly diseased; but the diseased cuticle has no regular arrangement, and is in various parts deeply fissured. XI. 29

The patient was a gentleman, 46 years old. He had been subject to the disease from his

birth ; but had been insane (in consequence, it was believed, of a blow on the head) for three years before his death. A drawing of the recent specimen is preserved, No. 396.

Presented by J. R. Diamond, Esq.

Vide Nos. 3321 to 3324, Series L.

EPITHELIOMA, AND OTHER MALIGNANT GROWTHS.

2712. A Hand, with part of the Fore-arm, removed on account of extensive ulceration of an epitheliomatous character, which appears to have commenced in the skin. XI. 7

2713. Portion of Skin from the outer and back part of the wrist, on which there is a large, oval, epitheliomatous ulcer, with hard sinuous, everted edges, and covered by granulations. The cancerous disease extended to the ligament of the first joint of the thumb. XI. 27

The patient, a man 80 years old, recovered after amputation of the fore-arm.

2714. Portion of Integument from the back of the arm of a woman, aged 35. It is infiltrated throughout with cancer, and in the centre of the growth there is a clot of effused blood. The growth had been observed for some weeks and was the seat of intense pain. The whole of the integuments and other tissues of the fore-arm were congenitally hypertrophied. XI. 46

2715. Portion of a Scalp, which was removed by operation. A circumscribed growth of white colour, and dense texture, with an ulcerated surface, originating in the skin, has extended to its adherent and free surfaces. XI. 25

2716. Portion of Skin, with a large lobulated, melanotic growth, which was believed to have originated in the interior of an encysted tumour. XI. 8

2717. A small Warty Growth from the Scalp, pigmented in the centre; it was removed after existing eighteen months; reproduced at the end of six; again removed, the patient remaining well at the expiration of one year and a-half. XI. 41

2718. Portion of a Scalp, in the substance of which there are several small, circumscribed, deposits of soft cancer. XI. 10

The same patient had a medullary tumour in the mediastinum; the heart is in Series VII, No. 1291.

2719. Portions of Skin containing nodules of carcinoma. XI. 45

From the patient from whom Specimens No. 2318 in Series XXVI, and No. 2327 in Series XXVII were taken.

RODENT ULCER.

2720. Portion of Integument removed from over the upper dorsal part of the spine. It presents a nearly circular ulcer, with somewhat sinuous margins, and between two and three inches in diameter. The surface of the ulcer is unequal, and covered with granulations, which, during life, were pale and rusty-pink, firm to the touch, and, in parts, warty. Its base is firm, its borders slightly raised; the tissues beneath it, even to the depth of the trapezius muscle and the vertebral spines, were indurated and confused. On microscopic examination, the diseased parts showed no signs of cancerous structure, but the constituents of ordinary granulations and thickened connective tissue. XI. 39

The patient was a cook, 40 years old. The disease was of ten years' duration, and had been variously treated without any advantage. The wound of the operation did not completely heal; and two years afterwards, ulceration similar to that which is here shown had reached a yet greater extent.

VASCULAR GROWTHS—NÆVI, &c.

2721. A large portion of Skin, removed from a woman's back. It presents an

irregular warty growth, which consists of numerous very densely-set processes, elevated on narrow pedicles. XI. 5

This growth had existed from infancy; it was very vascular, and had the general aspect of a large nævus.

2722. Portion of Skin, removed from the side of a girl's neck. Its surface is covered by an irregular warty growth, which had existed from birth, and during life appeared very vascular, and like a nævus. XI. 12

2723. Portion of Skin removed from the posterior and lower part of the trunk of a middle-aged woman. A large portion of skin, originally occupied by a nævus, has undergone the following changes. It presents an irregular warty surface, composed of a multitude of densely-set, lobulated growths, which are for the most part elevated on narrow pedicles. The whole are covered by a thin layer of dark cuticle, detached portions of which fill up in great measure the interspaces between the several growths. About the centre of the portion of skin, there is a pendulous tumour, of the same characters as the others, but of much larger size. They are all composed of a dense cellular tissue, similar to that of the corium. XI. 23

Presented by William Taylor, Esq.

2724. Right lower extremity of an infant, aged 10 months. The texture of the cutis is natural over the buttock, but uniformly thickened over the thigh, while on the leg and foot it is very much hypertrophied, condensed, and studded with numerous knots and tubercles. The subcutaneous tissue is greatly increased, being from one to two inches thick about the calf and upper part of the back of the thigh. It is everywhere occupied by a dense, reticulate, spongy, venous tissue of a cavernous character; there are but few venous trunks to be seen, but everywhere a structure like erectile tissue, very elastic, and which contracted on section. In the subcutaneous tissue of the foot, leg, and lower part of the thigh, the meshes of this cavernous texture are very fine and close. Towards the back of the upper part of the thigh, where it joins the buttock, the reticular and cavernous spaces are of much larger dimensions, some being as large as the end of one's thumb. The intermuscular connective tissue is everywhere occupied by the same cavernous structure. Similar tissue was found on the right side within the pelvis, extending into the loins behind the right kidney. The muscles are healthy and of normal size.

For a further account of the case, which appears to be one of nævoid elephantiasis, see *St. Bartholomew's Hospital Reports*, vol. v.

Vide also Nos. 3341 to 3346 in Series L; also casts of morbid growths, Nos. 170 to 173.

DISEASES OF THE CUTANEOUS GLANDS.

SEBACEOUS CYSTS.

2725. A Cyst, removed by operation from beneath the skin covering the scapula. It contained masses of grumous and granular fatty matter, some of which are still adherent to its internal surface. XXXV. 15

2726. Sections of a Cyst removed from beneath the skin of an elderly woman's scalp. Its walls are tough and hard, from half a line to nearly two lines in thickness, and it is filled with irregular plates and grumous masses of a soft, cheesy, sebaceous substance. XXXV. 46

2727. Two Cysts which contained a soft white substance, partly of the consistence of honey, and partly disposed in flakes, like scrapings of spermaceti. The walls of the cysts are dense and strong. They are everted to show their internal surfaces, which are white and polished. XXXV. 13

2728. A small Sebaceous Cyst removed entire from beneath the orbicularis muscle of a child, in whom it had existed since birth. XI. 47

Vide Nos. 3363, 3364 in Series L.
For Acne, vide Cast No. 175.

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DERMOID CYSTS.

2729. Portion of a small Dermoid Cyst, removed from the shoulder of a child. Long black hairs are attached to the inner surface. At the bottom of the bottle is a mass of hair, which was found within the cyst.

Presented by W. Morrant Baker, Esq.

2730. A Lock of dark brown Hair, disorderly matted, from a cutaneous cyst in the scalp. The hairs are from one to two inches in length, and have shrivelled bulbs. They lay loose in the cavity of the cyst, with its softened contents mixed with pus. XXXV. 62

The cyst was, probably, congenital; but was not noticed till six weeks after birth. The structures of its walls were disordered by chronic inflammation, which had also led to the formation of a sinus into its cavity. The patient a woman, 30 years old, recovered quickly after the removal of the cyst.

Vide also Nos. 3369 and 3370 in Series L.

MOLLUSCUM CONTAGIOSUM.

2731. Three specimens of Molluscum contagiosum, removed from a patient, aged 5 years.

Vide Cast No. 176.

PARASITIC DISEASES.

Vide Cast No. 177.

DISEASES OF THE NAILS AND HAIR.

NAILS.

2732. Sections of the diseased Nail of a great toe. It consists of a layer of hard, horny substance, two lines in thickness, with thinner and softer layers attached to its inferior surface. XI. 34

ONYCHIA MALIGNA.

Vide Model No. 178.

HAIR.

2733. A lock of variegated Hair. The shaft of nearly every hair is alternately brownish and silvery-white, in nearly regular and equal portions of its length. Collected in the lock, the hair has a peculiar speckled appearance. Its texture is of an ordinary kind, except that the darker portions of its shafts are a little larger than the pale ones, and present an appearance of black medulla which is not seen in the pale portions. XI. 36

From a young man in Greifswald. The peculiarity was not hereditary.

Presented by Professor Baum.

2734. Plica Polonica; a large quantity of hair matted, with the secretions of the scalp, into a thick hard mass. XI. 6

Removed from the head of a native of Wilna, in Lithuania.

Presented by W. S. Ward, Esq.

INJURIES OF THE SKIN.

Vide Nos. 3225 to 3227, Series L.

SERIES XXXVI.

DISEASES OF THE TESTICLE, ITS COVERINGS, AND OF THE SPERMATIC CORD.

DISEASES OF THE TUNICA VAGINALIS.

HYDROCELE OF THE TUNICA VAGINALIS.

2735. The Tunica Vaginalis and Spermatic Vessels from a case of Hydrocele. In consequence of an unequal yielding of the tunica vaginalis, there is a distinct prominence of the swelling at its lower part. The testicle is situated at the lower and back part of the sac, just above this prominent part. XXVIII. 5

2736. A Hydrocele. The blood-vessels of the tunica vaginalis and testicle are injected. The testicle is divided, and appears healthy. XXVI. 6

2737. Section of a Hydrocele, exhibiting the testicle at the lower and posterior part of the sac flattened by the pressure of the fluid. XXVIII. 47

2738. A similar specimen. XXVIII. 48

2739. A Hydrocele, with thickening of the enlarged tunica vaginalis and opacity of its internal surface. XXVIII. 7

2740. A Hydrocele, with thickening of the tunica vaginalis, and an irregular nodulated and tuberculated condition of the internal surface. XXVIII. 23

2741. A Hydrocele, in which the enlarged tunica vaginalis is thickened, indurated, and of cartilaginous texture. The testicle is healthy, and situated at the middle of the posterior wall of the sac. The spermatic vessels are separated, the vas deferens and the spermatic artery being placed together, at some distance from the spermatic veins. XXVIII. 2

2742. A very large Hydrocele, with thickening of the tunica vaginalis. The testicle is situated near the middle of the posterior wall of the sac, and a thick and broad membranous partition extends from it transversely across the middle of the sac, which it separates into two cavities communicating only in front of the partition. The vas deferens is exposed running vertically along the back part of the tumour. XXVIII. 8

2743. Clear, straw-coloured Fluid, from a hydrocele of the tunica vaginalis. XXVIII. 73

HÆMATOCELE OF THE TUNICA VAGINALIS.

2744. A Testicle, with the cavity of the tunica vaginalis enlarged and filled with masses of soft fibrinous substance from coagulated blood. The tunica vaginalis is thick and hard; the testicle is healthy. XXVIII. 4

2745. A Testicle and Tunica Vaginalis. The tunica vaginalis, laid open by a section carried through the testicle from behind, is thickened and enlarged. Its cavity was filled with fluid blood; and irregular masses of solid blood-stained fibrinous substance adhere to its internal surface. The testicle appears healthy. XXVIII. 44

2746. A Testicle and Tunica Vaginalis from a case of Hæmatocele. The tunica vaginalis is much thickened and numerous ulcers, most of them small and "punched out," are thickly scattered over both the visceral and parietal surfaces. An ulcer of considerable extent is seen at the inferior extremity of the testis. The tunica vaginalis was filled with grumous sanguineous fluid.

No trace of tubercle was found at the base of the ulcers on examination with the microscope. Removed from a man, aged 31 years. Ten days before his admission to the Hospital his left testicle became suddenly tender, and increased rapidly in size; it had been more or less swollen for two years. On admission, the scrotal tumour was as large as a cricket ball, semi-fluctuating, and not translucent.—See *Henry Ward Book*, vol. vii, p. 114.

2747. A Testicle, with its Tunica Vaginalis enlarged, thickened, indurated, consolidated with the surrounding tissues, and having a soft and dark substance, probably altered blood, adhering to its internal surface. The testicle is healthy. XXVIII. 1

2748. Portion of a Tunica Vaginalis, from a Hæmatocele. It is thickened and indurated, so as to appear almost cartilaginous in texture, and its internal surface is unevenly tuberculated. XXVIII. 46

EFFECTS OF INFLAMMATION OF THE TUNICA VAGINALIS.

a. Adhesion of the two layers.

2749. Sections of a Testicle, with the cavity of the tunica vaginalis obliterated by layers of false membrane a third of an inch in thickness, and very tough and compact. At the posterior part, by the side of the epididymis, earthy matter has been deposited in the midst of the new tissue. The substance of the testicle is soft, but not otherwise diseased; it is of natural size, but the epididymis is enlarged and indurated. All the tissues around the tunica vaginalis appeared thickened, adherent, and hard, and, together with the thick layer of false membrane, gave the characters of a considerable enlargement of the testicle itself. XXVIII. 56

The other testicle was similarly affected, but to a slighter extent.

2750. A Testicle, showing complete adhesion of the layers of the tunica vaginalis to each other.

2751. Two Testicles. Upon the upper part of each there is a cyst of globular form, which was filled by a watery fluid. It is probable that this cyst was formed between the layers of the tunica vaginalis, which, in the rest of their extent, are adherent. The structure of the testicles themselves is healthy. XXVIII. 52

For other Specimens of Adhesion of the Layers of the Tunica Vaginalis, vide Nos. 2760, 2814, 2816.

b. Suppuration in the Cavity of the Tunica Vaginalis.

2752. A Tunica Vaginalis greatly enlarged, tough, and thickened to the extent of one to three lines; its internal surface is very vascular; and its cavity was filled with pus. The testicle is enlarged and indurated. XXVIII. 8

2753. A Testicle and Tunica Vaginalis laid open. The cavity of the tunica vaginalis, which had probably been the seat of an old hæmatocele, was found filled with pus. The tunica vaginalis is dense and thickened by layers of

fibrous tissue, and in one place presents the appearance of fibro-cartilage. The testicle appears normal.

The specimen was taken from the body of an old man, who died of senile gangrene of the leg, with bronchitis. He had complained of pain in the testicle only a few days before death.

Presented by Mr. F. S. Eve.

LOOSE BODIES IN THE TUNICA VAGINALIS.

2754. A flattened Calcareous Body about the size of a pea. It was found loose in the cavity of the tunica vaginalis of a middle-aged man. On one of the surfaces is a small tubercle, apparently the point of attachment of a pedicle; and a small fibrous nodule was found on the surface of the testis, close to the head of the epididymis, which was probably the base of the pedicle.

Vide No. 2811.

DISEASES OF THE TESTICLE AND EPIDIDYMIS.

ATROPHY AND ARREST OF DEVELOPMENT.

2755. The atrophied Testicle of an old man. XXVIII. 26

2756. A Testicle, reduced to half its natural size, in consequence of the pressure of a hydrocele in the opposite side of the scrotum. The body of the testicle is much more atrophied than the epididymis. XXVIII. 25

2757. The Vesiculæ Seminales and Vasa Deferentia, with an undeveloped testicle, from an adult. The two vesiculæ are of the same size, and they both contained the usual brownish fluid. The undeveloped testicle, with a portion of its vas deferens converted into a solid cord, is in the centre of the preparation. The other testicle was of natural size. XXVIII. 53

2758. The right Testicle, very ill-developed, of a man, aged 22 years, who, during life, was of feeble intellect, and subject to epileptic fits. The medulla oblongata was small and unsymmetrical, and after death, clots, evidently old formations, were found in the longitudinal sinus and pulmonary arteries.

2759. The Testicles of an adult, which had been retained within the inguinal canal. Both the glands are much smaller than natural, and with one of them a peritoneal sac is connected. XVII. 54

EFFECTS OF INFLAMMATION OF THE TESTICLE.

2760. A Testicle, exhibiting the effects of acute inflammation in its interior. Several irregular cavities extend through the interior of the testicle, which were filled by pus and lymph. The pus has escaped, but portions of the lymph remain. The glandular tissue around these cavities is consolidated. A small quantity of transparent fluid was found in the sac of the tunica vaginalis, and there were partial adhesions between its opposite surfaces. At one part, the tunica albuginea is thin and irregular on its surface, as if yielding to the enlargement of the testicle. XXVIII. 55

From a man, on whom the operation of lithotrity had been performed. The disease of the testicle commenced a week after the operation, and nearly a week before the patient's death. A portion of the broken calculus had previously become fixed in the urethra. The bladder, No. 2398, in Series XXIX, was taken from the same patient.

2761. A Testicle and its membranes divided by a longitudinal section. The testicle, which is seen above, was easily turned out from its membranes. Its structure appears to be but slightly altered, beyond being infiltrated with inflammatory deposit. The membranes are altogether much thickened and otherwise altered, apparently by chronic inflammation. XXVIII. 66

From a man, aged 31. The disease had existed about five months.

2762. A Testicle and Spermatic Cord. In the centre of the testicle there is an irregularly circumscribed abscess, from which a fistulous passage (into which a portion of glass is introduced), extends through the tunics of the testicle and scrotum. The substance of the testicle around the abscess is indurated.

XXVIII. 45

2763. A Testicle, removed from a man, aged 52 years. It had been enlarged for nine years. The bulk of its substance has disappeared; its place being supplied by a dense, firm, though friable mass of fibrous tissue. The tunica vaginalis has been converted into a thick-walled cyst, the interior of which was covered with rough lymph, and apparently old blood-clots. Above the mass was a smaller, though similar cyst.

PROTRUSION OF THE TESTICLE THROUGH ITS ULCERATED COVERINGS (Fungus Testis).

2764. A Testicle, with a portion of the Scrotum. The testicle, and a mass of soft fungous, and vascular granulations from its anterior surface, are protruded through an ulcerated aperture in the scrotum. What remains of the natural structure of the testicle is imbedded in the back part of the protruded mass.

XXVIII. 21

2765. A Testicle, with a portion of the Scrotum. The testicle, covered on its anterior part by a layer of granulations, is protruded through an ulcerated aperture in its tunics, and the scrotum. A section of the protruded testicle shows that its glandular tissue is but little altered; but the epididymis appears indurated and consolidated with the adjacent tissues. XXVIII. 27

2766. A Testicle, with a portion of the Scrotum. The testicle, enlarged, indurated, and exhibiting appearances of caseous material deposited in it, is protruded through an ulcerated aperture in its tunics and the scrotum. The protruded surface is thinly covered by granulations; the posterior part appears healthy. XXVIII. 35

2767. A Testicle affected with strumous disease. Large fungous granulations project through the scrotum. XXVIII. 64

2768. A similar specimen. XXVIII. 65

2769. A Testicle, from a child, 7 years old, enlarged and indurated. It is protruded through an ulcerated opening in its tunics and the scrotum. The protruded surface is covered by granulations. XXVIII. 39

2770. Portion of a Testicle, apparently unaltered in structure, but covered by granulations, which protruded through an ulcerated aperture in its tunics and the scrotum; it was removed by operation. XXVIII. 29

Vide No. 2781.

SYPHILITIC DISEASE OF THE TESTICLE.

2771. A left Testicle injected. The surface of the anterior and lower part of the testicle is irregular and nodular, and the black discoloured patch formed the base of a serpiginous ulcer of the scrotum, through which the testicle slightly protruded. The organ is occupied by large yellowish-white nodules or gummata, of a tough, fibrous, non-vascular material. Two of the smaller gummata are distinct, the remainder have coalesced into a mass, which occupies the anterior portion of the organ. A loose fibroid tissue, which is very vascular and of a pink colour, due to the injection, surrounds and separates the nodules. The epididymis is lost in the general substance of the testicle. The disease was probably syphilitic; microscopic examination showed that the nodules consisted of a firm, indistinct, fibroid tissue, in which no trace of the tubuli seminiferi could be found. Towards the edge of the nodules the

fibroid tissue was looser, and contained numerous small round cells, while at the junction of the vascular and non-vascular structures the round cells were very abundant and enclosed in the meshes of a loose reticulum of connective tissue. The inter-nodular structure was composed of a loose fibrous tissue, very vascular, and enclosing at wide intervals tubes containing caseous material, which appeared to be contracted seminiferous tubes.

From a man, aged 35 years. Four years before his admission to the Hospital the testicle became swollen, but subsequently regained its normal size: two years later it again became swollen, gradually increasing in size, and finally an ulcer formed, which exposed the testicle. There was no conclusive evidence of syphilis, but he appeared to have had a node on the sternum.—See *Henry Ward Book*, vol. vi, p. 270.

Microscopic sections are preserved, No. 119.

2772. Sections of a Testicle. The organ is but little altered either in shape or size. Its external surface is uniformly smooth, firm, and inelastic to the touch. The epididymis is scarcely, if at all, affected. The parenchyma of the body of the testicle has been completely replaced by a dense, tough, yellowish-white material, like old inflammatory lymph. This under the microscope is seen to consist of fine granules and of oil-globules of various sizes, with no trace of fibrillation, and only faint vestiges here and there of cell-formation.

The specimen was taken from the body of a middle-aged man brought to the Hospital for dissection. No history of the case could be obtained; but numerous scars, like those the result of syphilitic ulceration, were seen on various parts of the body. The opposite testis was similarly affected, but to a somewhat less extent.

TUBERCULAR DISEASE OF THE TESTICLE AND EPIDIDYMIS.

2773. Two Testicles. One of them is enlarged to about twice its natural size; and pale yellow, soft caseous matter is almost uniformly diffused through its substance, leaving scarcely any intervening portions of the glandular tissue. In the other testicle are several distinct and circumscribed deposits of caseous matter at its lower part, and in the epididymis. XXVIII. 32

From a man, 30 years old. The enlargement of the testicle had been observed many years. He died with tubercular disease of the prostate, lungs, and other organs.

2774. Sections of a Testicle, enlarged, indurated, and in many parts infiltrated with caseous matter. The part which is not filled by caseous matter is white and tough, like the tissue of a cicatrix. The caseous matter is in circumscribed masses of irregular shape, compact, and of a pale yellowish-white colour, which project above the surface of the substance in which they are deposited. Above the testicle there is a mass of similar indurated tissue with caseous deposit, situated either in the spermatic cord or in the upper part of the epididymis. XXVIII. 20

The patient was a gentleman, 42 years old. The testicle had been enlarging for seven years. Shortly before its removal the disease appeared to extend rapidly up the spermatic cord, and some enlargement was observed in the opposite epididymis.

2775. Two Testicles enlarged, and having circumscribed deposits of caseous matter in their interior, and in that of each epididymis. XXVIII. 38

2776. A Testicle affected with Tubercular Disease. The organ is uniformly enlarged, and the posterior portion is occupied by a uniform yellowish substance; but towards the anterior part the tissue of the testicle can be discerned studded with yellow spots of caseous material. The epididymis is enlarged, and also contains caseous matter.

From a man, aged 21 years. Six weeks before admission to the Hospital he found the testicle to be increasing in size, and he suffered some pain in it. In a fortnight the organ reached its present size. The enlargement was uniform, firm, and elastic. Before removal the disease was thought to be malignant. The nature of the disease was verified by microscopic examination.—See *Darker Ward Book*, vol. vii, p. 92.

2777. The left Testicle removed from a man, aged 40. It is divided by a longitudinal section. The whole interior is filled by a deposit of caseous matter; scarcely a trace of the natural structure of the testis is visible. The testis had been enlarged for eight months. The right epididymis was also considerably increased in size. XXVIII. 67

2778. Sections of two Testicles. In one testicle the place of the natural structure is entirely occupied by large masses of caseous matter. In the other, a small portion of the natural structure remains around a mass of caseous matter. Ulceration of the skin and of the tunics of one testicle had taken place, allowing the protrusion of the morbid substance. XXVIII. 50

Both testicles were removed at the same time from a man, 40 years old.

2779. A Testicle, exhibiting a circumscribed mass of caseous matter in its centre. The adjacent part of the testicle appears healthy, and the morbid deposit has produced no enlargement. The other testicle was similarly diseased. XXVIII. 22

2780. A Testicle affected with Tubercular Disease. The epididymis is filled with caseous matter, which has broken down into an abscess. A caseous mass occupied also the mediastinum testis. Numerous miliary tubercles could in the recent state be distinguished, scattered through the substance of the testicle. They were abundant near the mediastinum, but few near the surface of the testicle.

The disease was of four months' duration, and occurred in a man, aged 41 years; the exciting cause was unknown.

2781. A similar specimen. A mass of caseous matter occupies the globus minor. It has a circular outline and a deeply crenated edge. The testicle itself appears healthy. A portion of the gland protrudes through an ulcer of the scrotum.

The patient from whom the testicle was removed had contracted gonorrhœa a year before admission into the Hospital; and the affection of the testicle dated from a short time after this attack.

2782. A Testicle, exhibiting distinct and circumscribed deposits of caseous matter in the epididymis. The vas deferens is obliterated and contracted. The body of the testicle appears healthy. XXVIII. 33

TUMOURS OF THE TESTICLE.

ENCHONDROMATA.

2783. An Enchondroma of the Testicle. The cartilage is arranged in tortuous columns, which, in a transverse section, have the appearance of nodules. The centre of most of the columns contains a yellow opaque material, by the removal of which a central canal is formed in some instances. The columns are separated by a small amount of connective tissue. The epididymis is also converted into a mass of cartilage. No trace of normal gland tissue exists in the organ.

From a man, aged 22 years, who first noticed that the testicle was enlarged four years before its removal: during the last year it remained stationary. The testicle was extremely hard, except at one point above and behind: this was found to be occupied by a cyst and some unaltered gland tissue. No return of the disease had taken place five years after the operation. —See *Abernethy Ward Book*, vol. iii, p. 153.

2784. Section of a Mass occupying the place of a Testis, from a man, aged 37 years. The lower portion is composed of tortuous, cylindriform pieces of

cartilage, which are closely packed and imbedded in a tough filamentous white connective tissue. Over parts of the outer surface of the mass, a layer of seminal tubes is thickly spread out between it and the tunica albuginea. Surmounting this, and separated from it by a layer of connective tissue, is a conical mass formed of similar but smaller pieces of cartilage. XXVIII. 68

2785. A branching Cartilaginous Growth which projected from a lymphatic into the cavity of the vena cava inferior. The coats of the vein, which had undergone no change in their structure, were reflected on its narrow base, but, gradually thinning, were lost on many of its branches, which thus appeared bare and in direct contact with venous blood. XXVIII. 69

2786. A large Lymphatic laid open. Its canal appeared filled by a large cylindrical growth, but this could be loosened and unravelled into the bundle of variously-shaped small bodies suspended on long branching stems, and consisting usually of nodules of cartilage imbedded in a softer tissue. XXVIII. 70

2787. A cluster of small oval and rounded Tumours, which extended along the course of the spermatic cord, and were loosely connected with its structures. They are composed chiefly of small cylindrical and nodular pieces of cartilage, clustered with growths of a softer substance on slender threads, and enclosed in thin-walled canals. XXVIII. 71

The four preceding specimens are from a case described by Sir J. Paget in the thirty-eighth volume of the *Medico-Chirurgical Transactions*.

FIBROUS AND FIBRO-CYSTIC TUMOURS.

2788. Section of a Tumour occupying the Testicle. It is of nearly regular, oval shape, and about six inches in its chief diameter. It is lobed, and now close-textured, tough, pure white, like firm connective tissue. In the recent state it was succulent and translucent, its substance being infiltrated with a clear, yellow, serous, and synovia-like fluid. Part of the tunica albuginea is reflected from its surface, and within this part seminal tubes were found spread out around it. XXXV. 73

The patient was 37 years old, and the growth of the tumour was observed for seven years. In microscopic structure it showed scarcely anything but fibro-cellular tissue, in bundles of well-formed filaments mingled with elongated fibre-cells. A diagram (No. 326) shows the tumour in its recent state.

Presented by Dr. Ormerod.

2789. A Testicle, removed by operation. Its interior is occupied by a tumour developed among the tubuli seminiferi and still surrounded by a thin layer of them. The lower part of the tumour is formed by a homogeneous compact yellow substance; but its chief mass is composed of a firm tissue, traversed by white fibres, in which there are numerous cysts. The walls of the cysts are closely connected with the surrounding tissue, and are lined by a polished membrane. Most of them were filled by a fluid resembling mucus; others contained a fluid like serum; and in one, a small lobulated growth has arisen from the interior of the wall and nearly fills the cavity. XXVIII. 51

From a gentleman of middle age, in whom the tumour had grown slowly. Four years after the operation he was in perfect health.

2790. Two Testicles (probably from the same person), in each of which there is a large oval mass of firm, obscurely-fibrous, and spongy substance, with small cysts thickly interspersed in many parts of it. The cysts have distinct membranous walls, and are from one to three lines in diameter; in some parts of the tumour many of them are closely crowded together, with their walls in apposition. XXVIII. 19

2791. A Testicle, filled by a mass of firm substance with small cysts interspersed in it. Some of the cysts contained blood, others a gelatinous substance.

XXVIII. 37

2792. A Testicle, in which there is a large firm tumour, in parts appearing fibrous, in parts spongy, and having numerous cysts, with distinct membranous walls imbedded in its substance. In some of the larger cysts there are growths of soft substance. The opposite surfaces of the tunica vaginalis are partially adherent. XXVIII. 24

2793. Section of a large Fibro-cystic Tumour in a Testicle. The tumour forms a broadly-oval mass, and is chiefly composed of a very firm, dense, and elastic, greyish-white substance, intersected by white lines, which have some appearance of radiating and forming close-set lobes. It has, in these respects, a close resemblance to the firmest fibro-muscular tumours of the uterus. Numerous cysts are imbedded in all parts of it. They have smooth and polished internal surfaces, and could not be dissected from the surrounding substance of the tumour. In the recent state they were filled with liquid, which in some was like serum, in some like serum mixed with pus, in some creamy, in some brown, thick and grumous. Portions of cartilage, also, in small nobules, are thinly scattered in the substance of the tumour. The tunica albuginea, extended round the tumour, is much thickened; on its internal surface a thin layer of seminal tubes was found spread out.

The patient was 58 years old. He believed that the disease had been twenty years in progress, and that it commenced in inflammation of the testicle during gonorrhœa. The testicle, after this inflammation, had remained enlarged, but no certain increase of it was noticed till ten years later. From that time the increase was constant, though slow. The patient recovered after the removal of the testicle, and for at least twelve months had no return of the disease.

2794. Section of a Testicle, in which the place of the natural structure is occupied by a large oval mass of firm fibrous substance, in which some small portions of cartilage and many cysts are imbedded. XXVIII. 17

SARCOMATA.

2795. A Sarcoma of the Testicle, containing a large mass of cartilage, which is arranged in the same manner as in the Specimens Nos. 2783 and 2784.

2796. Sections of a Testicle, occupied by a round-cell sarcoma. The new growth is lobed, pale, soft, and greyish. Imbedded in its lower part, and separated from it by a thin filamentous capsule, is an oval mass of cartilage, from an inch and a half to two inches in diameter. Points of bone are scattered in the cartilage, which is arranged in tortuous columns or rods. XXVIII. 62

The patient was 38 years old. The disease was observed in progress for eighteen months. Death occurred a fortnight after the removal of the disease, and secondary deposits were found in the lumbar lymphatic glands, but they contained no cartilage.

A drawing, No. 481, shows the parts in the recent state.

2797. A Testicle, occupied by a soft new growth, at the lower part of which is a large nodule of cartilage.

The constituents of the tumour had been much altered by long immersion in spirit, but it appeared to be a round-cell sarcoma. The cartilage was arranged in nodules, and consisted of small flattened nuclei, surrounded by a hyaline matrix. The connective tissue surrounding the nodules contained bands of spindle-cells.

The testicle was removed after death, from a man aged 45 years. There were numerous secondary deposits in various parts of the body. Microscopic sections of the cartilage are preserved, No. 120.

Presented by R. O. Clarke, Esq.

MEDULLARY CANCERS.

2798. Section of a Medullary Cancer of the right Testicle. The organ measured

seven or eight inches in length by five or six in breadth; it was of an uneven pyriform shape, tense and of soft semi-fluctuating consistence. The softness was at some points so extreme as to have given many the impression that the disease was cystic. The testicular surface of the tunica vaginalis is perfectly smooth, and at no part adherent to the scrotal surface. The spermatic cord and epididymis are not involved in the morbid growth. The section of the tumour is divided into three or four lobules of unequal size.

Microscopic Examination.—The tumour is divided into oval or irregular alveoli by broad trabeculæ of imperfectly developed connective tissue containing a large number of round, oval, and spindle-shaped nuclei. The alveoli enclose closely-packed round or oval cells, of very uniform size; in a few instances a thin rim of unstained protoplasm can be seen surrounding the large deeply-stained nucleus. The normal structure of the testicle can nowhere be recognised.

From a man, aged 34 years. Fourteen months before admission to the Hospital he first noticed a slight enlargement of his right testicle, and subsequently it steadily increased in size. His general health was not affected, and he suffered no pain, only some inconvenience from the weight of the organ. Microscopic sections are preserved, No. 122.—See *Abernethy Ward Book*, vol. v, p. 380.

2799. A Medullary Cancer of the Testicle, injected. The organ measures five inches long by four broad. The two layers of the tunica vaginalis are adherent to each other. On the surface of the section the outline of the testicle proper is still distinguishable; it is marbled by the intermixture of brownish-red masses with the white medullary substance; the injection has not penetrated into this part of the tumour. Above and below the infiltrated epididymis is cut across. Its numerous vessels are injected; the growth is here softer and more brain-like.

Microscopic Examination.—The irregularly dilated ducts of the testicle are in places distinguishable; they are filled with small granular cells intermingled with much granular *débris*. There is no alveolar arrangement, except that produced by the dilated ducts. In some parts of the tumour there is a large quantity of connective tissue, almost destitute of cells.

From a man, aged 35 years. His right testicle began to enlarge six or eight months before his admission to the Hospital, without evident cause; it increased in size very rapidly. The testicle was oval, smooth, soft, and semi-fluctuating.—See *Pitcairn Ward Book*, vol. v, p. 434.

2800. A Medullary Cancer of the Left Testicle, which had descended through the inguinal canal, but had not reached the scrotum. In the operation for its removal the diseased testicle was found lying immediately beneath the integuments and outside the aponeurosis of the external oblique muscle. The right testicle was healthy and in the normal situation.

From a man, aged 25 years.

2801. Section of a Testicle occupied by a large oval mass of soft, medullary substance, probably soft cancer. The morbid growth extends from the upper part of the testicle into the cellular tissue of the spermatic cord. The opposite surfaces of the tunica vaginalis are adherent. XXVIII. 31

2802. A similar specimen. The growth is traversed by partitions which divide it into many round masses. The tunica albuginea is thickened, and the opposite surfaces of the tunica vaginalis are adherent. XXVIII. 12

2803. A Testicle, with a portion of the abdominal walls. The place of the testicle is occupied by a soft, brown medullary substance. The tunica vaginalis communicated with the cavity of the abdomen. XXVIII. 40

From the same patient as No. 2291 in Series XXIV, and No. 2219 in Series XXI.

CYSTS CONNECTED WITH THE TESTICLE AND EPIDIDYMIS.

ENCYSTED HYDROCELE OF THE TESTICLE.

2804. An Encysted Hydrocele of the Testicle; the cyst is nearly as large as a hazel nut, and situated in the usual position, close to the head of the epididymis.

The cyst contained a clear watery fluid, in which some small cells were visible, but no spermatozoa were found.

There was also a small hydrocele of the tunica vaginalis. The testicle was soft and ill-developed.

2805. A similar specimen. XXVIII. 41

2806. A Testicle, with part of the Spermatic Cord. Along the epididymis there is a series of thin and delicate membranous cysts communicating together, and having for their boundary the tunica vaginalis at its reflection between the testicle and epididymis. They contained a transparent and colourless fluid. A bristle is passed beneath the vas deferens near its connection with the epididymis. XXVIII. 43

2807. A right Testicle, with the Spermatic Cord. There is a large cyst immediately above the testicle, and closely connected with the epididymis. Other smaller cysts lay between the testicle and epididymis, and in the substance of the epididymis; the fluid within the latter contained abundant spermatozoa, but none were found in the large cyst. The cavity of the tunica vaginalis was slightly distended with fluid. The fundus of a large hernial sac extends down the cord as far the upper part of the testicle; it appears to have been a funicular hernia.

Sections of the epididymis showed under the microscope an irregular dilatation of some of the tubuli, suggesting the origin of the cysts from dilated ducts.

Taken from the body of a man, aged 90 years.

2808. The left Testicle, taken from the same patient as the preceding. There is a similar large encysted hydrocele of the testicle, which contained spermatozoa. The epididymis also contained small cysts, and some of the ducts were found with the microscope to be dilated. A small hydatid of Morgagni existed on the head of the epididymis of both testicles.

2809. A Testicle, with the Tunica Vaginalis. There are several very thin-walled cysts of different sizes communicating with each other, and nearly surrounding the upper and anterior part of the testicle; none of them appear to communicate with the tunica vaginalis, but some of the smaller cysts are closely connected with the epididymis. XXVIII. 3

2810. Slightly opalescent Fluid, containing an abundance of spermatozoa. From a hydrocele of the testis. XXVIII. 72

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PEDUNCULATED BODIES ATTACHED TO THE EPIDIDYMIS.

2811. A Testicle, with a pedunculated body attached to the head of the epididymis, the hydatid of Morgagni.

DISEASES OF THE SPERMATIC CORD.

TUMOURS, &c.

2812. An elongated, lobed, fatty Tumour, removed, after death, from the loose connective tissue of a spermatic cord. XXXV. 66

2813. Section of a Tumour of rather soft consistence and fibrous appearance. It measured about two inches in length, and one and a half in breadth.

The tumour was removed with the testicle from a child, aged 13 months. The mother had noticed a swelling in the groin for six months. The tumour lay partly in the scrotum, and partly in the groin. On dissection, the spermatic cord was found on the posterior surface of the growth, which was immediately above the epididymis, and covered by the infundibuliform fascia.

Microscopic examination showed that the tumour consisted of mucoid tissue, and ill developed connective tissue containing round and spindle-shaped cells.—See *Pathological Society's Transactions*, vol. xxxi, 1881.

Presented by W. J. Walsham, Esq.

HYDROCELE OF THE SPERMATIC CORD.

2814. A Hydrocele in the Spermatic Cord. There is a single large cyst immediately above and behind the testicle. Its inner surface is fasciculated, but lined by a distinct smooth polished membrane, which has no connection with the tunica vaginalis and epididymis. The opposite surfaces of the tunica vaginalis, which were adherent throughout, have been partially separated. The testicle is healthy. XXVIII. 10

2815. A Hydrocele in the Spermatic Cord. There are two distinct large cysts which do not communicate. One of these is situated above the testicle, and the other behind it. They are both lined by a distinct membrane, which can readily be dissected from the surrounding structures, as was also the case in the preceding specimen. XXVIII. 28

HÆMATOCELE OF THE SPERMATIC CORD.

2816. A large Cyst in the Spermatic Cord, which contained blood. The cyst is situated just above the testicle, and the tissues round it are thickened, indurated, and consolidated. Part of the tunica vaginalis has been removed; the opposite surfaces were completely adherent. XXVIII. 11

SERIES XXXVII.

DISEASES OF THE SCROTUM.

HYPERTROPHY.

2817. A Scrotum greatly enlarged, in connection, probably, with a large hernia or hydrocele; for there is no apparent morbid change of structure in any of its tissues. XXVIII. 16

ELEPHANTIASIS.

2818. A Scrotum greatly enlarged, with thickening and induration of the skin and subjacent tissue. The surface of the skin is elevated in lobes and folds separated by deep fissures, and wrinkled. The subjacent tissue is compact and filamentous, like the tissue of firm skin. The sebaceous glands are enlarged, and exhibit wide open orifices, surrounded by elevated rings: they are especially numerous at the upper part of the diseased structure. XXVIII. 18

Vide Cast No. 150.

TUMOURS.

FIBRO-CELLULAR TUMOURS.

2819. A large Fibro-cellular Tumour, which was removed from the scrotum with a portion of the integument. XXVIII. 75

2820. Part of a Tumour from a scrotum, which weighed twenty-four pounds, and was about a foot in length. It is lobed, firm, elastic, white, and composed of compact, fibro-cellular tissue. In the recent state, many parts of it were infiltrated with serum, making them quite succulent; and in some there were extravasations of blood. At the lower part of the mass, the testicle and its tunica vaginalis (which contained some ounces of serous fluid) are shown flattened by its pressure. XXXV. 70

The patient was 74 years old, and the tumour was of five and a-half years' growth. It was easily separable from the surrounding parts, into which many lobes extended far from its chief mass. It was complicated, not only with the hydrocele above mentioned, but with a large serotal hernia that descended to its upper part, and with thickening and œdema of the scrotum.

The diagram No. 327 represents the tumour in its present state.

HORNY GROWTHS.

2821. A Horny Growth removed from the scrotum. From the history of the case, it is believed to have originated in a wart. The portion of skin close to the base of the horny growth is the seat of a papillated, raised, slightly ulcerated growth, which was found on microscopic examination to be an epithelioma. XXVIII. 74

2822. Horny Growths which were removed from the scrotum of a chimney-sweeper, where they had existed some months. During the last nine years five

similar growths had formed and had been shed. After attaining a certain size, the base became surrounded by a ring of ulceration, and at length the least violence sufficed to detach them. On the skin in the neighbourhood small dark warty growths were scattered. These had appeared in the last twenty years.

EPITHELIOMA.

2823. Portion of a Scrotum, on the surface of which there is an elevated, oval, warty growth, of firm texture, with a slightly granular, smooth, convex surface, which was vascular but not ulcerated. The margins of the growth project a little over the surface of the adjacent skin. By the side of this growth is one of smaller size and superficially ulcerated. XXVIII. 57

From a young chimney-sweeper.

2824. Portion of the Scrotum of a chimney-sweeper, of which a large part of the surface is covered by a very elevated papillated epithelioma of firm compact substance, the surface of which is nodular, deeply fissured, and ulcerated. XXVIII. 58

2825. Portion of the Scrotum of a chimney-sweeper, in which, by the further progress of the disease shown in the two preceding specimens, there is a deep epitheliomatous ulcer, with thickened sinuous margins. Along one margin of the ulcer there are several small warty growths, like that in No. 2823, and superficially ulcerated. XXVIII. 59

2826. Portions of Skin affected with epithelioma, the larger portion from the scrotum; the smaller from the perineum. On the latter, are two small cancerous warts, one prominent and branched, the other nearly subcutaneous. On the former, the cancerous disease appears partly in deep ulceration, partly in the form of large warty growths. The margins of the ulcer, shown especially on the right side, are, for the most part, sinuous, raised, and everted; its base appears coarsely warty. The chief warty growth is at the lower part of the specimen. Its surface is nodular and fissured, and from many parts of it there arise conical, curved, sharp-pointed bodies, about one-third of an inch in length, firm and white, like the strong papillæ of a carnivorous tongue. The cancerous structures extend to a depth of from one-eighth to one-fourth of an inch. Their microscopic constituents are those of epithelioma. XXVIII. 61

The patient was a healthy-looking chimney-sweeper, 25 years old. He had observed one of the small warts in the perineum for four years. The disease in the scrotum had existed only one year; and its progress was so rapid, both by ulceration and by sub-cutaneous extension, that it was necessary to remove all the skin of the scrotum, except a small piece at its lower part, a portion of the skin of the perineum, the prepuce, and all the skin of the penis, except a narrow ring round its middle, and nearly all the skin of the mons veneris. The right testicle, also, to which the base of the ulcer adhered, was removed; and three enlarged inguinal glands. The patient recovered from the operation, and the wounds were healed in three months.

SERIES XXXVIII.

DISEASES OF THE VESICULÆ SEMINALES, AND VASA DEFERENTIA.

2827. Two specimens of Vesiculæ Seminales, enlarged, indurated, and having deposits of caseous material upon their lining membranes. XXIX. 14

Vide No. 2847 in the next Series.

OBLITERATION OF THE VAS DEFERENS.

Vide No. 2782, Series XXXVI.

2828. A Bladder, to the posterior part of which a cyst is attached, which contained hydatids. The vesiculæ seminales and vasa deferentia are closely connected with the cyst; and the lower part of the right vas deferens communicates with it by two orifices into which a bristle is passed. A portion of this vas deferens is wanting; and it appeared that the cyst might have originated in the dilatation of the deficient portion of the tube. The walls of the cyst are thin, but tough and firm; the hydatids found within it are at the bottom of the bottle. XXIX. 15

SERIES XXXIX.

DISEASES OF THE PROSTATE GLAND.

HYPERTROPHY.

2829. A Prostate Gland, with parts of the bladder and rectum. The gland is greatly enlarged. The principal enlargement has taken place at the sides of the gland, and in the portion which is above and in front of the urethra: this portion is increased to upwards of an inch and a half in thickness, while the portion behind and below the urethra is scarcely thicker than is natural. The portion of the urethra is flattened laterally, and contracted. A portion of glass is introduced into a passage made by a trocar passed during life, from the rectum through the prostate gland into the urethra. The orifices of the ureters are much dilated. XXIX. 1

2830. A Bladder, with the Prostate Gland greatly and uniformly enlarged. The urethra within the prostate is deepened and laterally compressed. The muscular coat of the bladder is hypertrophied; bristles are passed beneath strong fasciculi of muscular fibres extending from the ureters to the neck of the bladder. XXIX. 3

2831. A Bladder and Prostate Gland. The prostate is much enlarged, and distinct round portions of it project into the neck of the bladder, both behind and in front of the urethra. The urethra within the prostate takes a very oblique course, in consequence, apparently, of the left lobe of the gland being more enlarged than the right. XXIX. 18

2832. A Bladder with the Prostate Gland laid open from the front. All the lobes of the prostate are greatly enlarged, and the third is deeply grooved along the mesial line; here a thin film of tissue bounds superiorly a passage which conducts into the bladder, the muscular coat of which is considerably hypertrophied. XXIX. 27

From an aged man, who had needed the daily employment of catheters for nine months preceding his death; their route into the bladder is probably indicated by the above-mentioned groove and the canal which it contains.

2833. A greatly dilated Bladder, and the Prostate Gland. The three lobes of the prostate are enlarged, especially the third, which projects upwards almost at a right angle, and forms a valve over the vesical orifice. A piece of glass rod is placed in a false passage at the base of the middle lobe. The ureters and pelves of the kidneys were not dilated.

From a man, aged 62 years, who never had any difficulty in micturition until eight days before his admission to the Hospital with retention. An elastic catheter was easily passed into the bladder.—See *Henry Ward Book*, vol. vii, p. 166.

2834. A Bladder with the Prostate Gland. The gland is generally enlarged; but its posterior portion, or middle lobe, is enlarged much more than any other

portion of it, and projects in the form of a round tumour into the cavity of the bladder, immediately behind the orifice of the urethra. The muscular coat of the bladder is hypertrophied. The ureters are dilated and thickened. Immediately above one of the ureters is a small cyst communicating with the bladder. XXIX. 6

2835. A similar specimen; but the prostate not being divided, as it is in the preceding preparation, exhibits more plainly the manner in which, when enlarged, it projects into the neck of the bladder; and, especially, the manner in which the enlarged middle lobe projects behind and above, and partially overhangs, the orifice of the urethra. XXIX. 7

2836. A Bladder and Prostate Gland. Both the lateral and middle lobes of the prostate are enlarged, but the middle lobe is enlarged in a much greater degree than the rest, and forms a nearly disc-shaped swelling, upwards of an inch in diameter, which projects into the cavity of the bladder; and overhangs the orifice of the urethra. The surface of this part is ulcerated. Several small cysts, or pouches, are formed by the protrusion of the mucous membrane between the hypertrophied muscular fibres of the bladder. XXIX. 12

2837. A Bladder and Prostate Gland. The prostate is greatly enlarged, and its middle portion projects into the neck of the bladder, in the form of a large broad-based cone nearly two inches high. This part has been deeply torn by catheters, which were arrested by it in the attempt to relieve the retention of urine. The coats of the bladder are thick, but weak and flaccid. The mucous membrane is in many places depressed between the fasciculi of the muscular coat. XXIX. 21

From a man, 70 years old, who had long had stricture of the urethra. The bladder was tapped above the pubes two months before death. He died exhausted with continued inflammation of the bladder and prostate.

Vide No. 3291, Series L.

IRREGULAR ENLARGEMENTS.

2838. A Bladder and Prostate Gland, with part of the Rectum. The prostate gland is exceedingly large, its surface is knobbed, and lobulated growths project from it into the cavity of the bladder. A passage was formed through the prostate by a catheter. The muscular coat of the bladder is thickened and its mucous membrane is ulcerated. At the upper and back part of the bladder is a large irregular aperture, formed by the sloughing of its coats, through which urine escaped into the abdomen. The rectum is much curved and compressed beneath the enlarged prostate. XXIX. 11

2839. Section of a Bladder, Prostate Gland, and Urethra. The prostate gland is enlarged, and some tumours growing from it project into the bladder. There was a calculus in the bladder, which was removed by the lateral operation of lithotomy a fortnight before death; and in the progress of the operation one of the tumours arising from the prostate was completely detached. This tumour is suspended in the lower part of the bottle; it is of oval form, about three-quarters of an inch in diameter, and appears to have been attached by a small pedicle. XXIX. 9

The calculus is preserved in the Series of Urinary Calculi.

2840. Portion of an enlarged Prostate Gland, of irregular shape, and measuring from an inch to an inch and a half in its several diameters, which was cut and torn off in the operation of lithotomy. XXIX. 26

The patient was about 40 years old, and had two large calculi. His recovery from the operation was quick and apparently complete.

2841. A lobulated portion of an enlarged Prostate Gland, which was brought away in extracting a stone from the bladder. XXIX. 30

ENLARGED PROSTATE GLANDS, PIERCED OR WOUNDED BY INSTRUMENTS.

2842. A Bladder, with the Prostate Gland, exhibiting a general enlargement of the gland, with predominant enlargement of its middle lobe. The enlarged middle lobe, and the portions of the gland and of mucous membrane which connect it with the enlarged lateral lobes, form a ridge across the neck of the bladder, behind the orifice of the urethra. Through the middle of this ridge a passage was formed by a catheter. XXIX. 8

Presented by R. S. Eyles, Esq.

Vide also Nos. 2837, 2838, 2849 in this Series; and 2423 in Series XXIX.

FATTY DEGENERATION.

2843. Portion of a Prostate Gland which appears to have undergone complete fatty degeneration of all its structures. Its cut surfaces have the aspect of a firm, minutely lobed adipose tissue. XXIX. 28

The patient was upwards of 70 years old. He had old stricture of the urethra, diseased bladder, and granular degeneration of the kidneys.

ABSCESS IN THE PROSTATE GLAND.

2844. A Bladder and Prostate Gland. The prostate is almost completely destroyed and its place occupied by a large abscess cavity, the wall of which is formed apparently by the capsule of the gland. The abscess cavity communicated above with the urethra, and also with an abscess between the bladder and symphysis pubis. A portion of glass rod is inserted into the urethra, and smaller portions are inserted into the ejaculatory ducts. The vesiculæ seminales are compressed. The bladder is contracted and its wall is thicker than normal. The ureters are extremely dilated, and their openings into the bladder would admit a goose-quill. The pelves of the kidneys were dilated, and the parenchyma was atrophied and contained cysts. No stricture of the urethra could be found.

From a man, aged 39 years. His illness commenced three months before his admission to the Hospital. He suffered from great pain in the bladder, difficulty in micturition, and passed ammoniacal urine. For the last eight years he had occasionally passed small stones from the bladder.—See *Pitcairn Ward Book*, vol. vi, p. 303.

2845. A Prostate Gland, in each lateral lobe of which there is a large irregular cavity, formed by ulceration, and communicating with the urethra by the sides of the caput gallinaginis. Urinary calculi have been formed in these cavities. The mucous membrane at the neck of the bladder and in the prostatic part of the urethra is diffusely ulcerated. XXIX. 10

TUBERCULAR DISEASE.

2846. Sections of a Prostate Gland from a young man, with round circumscribed masses of caseous matter deposited in it. XXIX. 19

There were tubercles in the lungs and other organs. The bladder of the same patient is preserved in Series XXIX, No. 2413.

2847. Prostate Gland, Vesiculæ Seminales, and part of the Bladder. Sections of the prostate and left vesicula seminalis exhibit caseous matter deposited in the interior of each. In the vesicula seminalis the caseous matter forms a uniform lining to the mucous membrane, the reticular arrangement of the surface of which remains distinct. The prostate is almost uniformly infiltrated through its left half, and some of the caseous matter is softened: the right side of the prostate is nearly healthy. XXIX. 20

From a young man in whom there were tubercles of the lungs and other organs. His left kidney is preserved in Series XXVIII, No. 2340. The right kidney was healthy. The left testicle had caseous deposits in its interior: the right was healthy.

2848. A Prostate Gland, of which nearly the whole substance has been destroyed by tubercular ulceration. Only a thin shell of the gland remains surrounding a cavity with irregular walls, which was traversed by some cords of the indurated

tissue of the gland infiltrated with caseous matter, and which contained pus and detached portions of the gland. The cavity communicates by a wide orifice with the urethra. XXIX. 23

The patient was an old man, who had tubercular disease of the lungs, kidneys, testicles, and other organs. He died with inflammation of the bladder.

TUMOURS, AND OTHER ALLIED MORBID GROWTHS, IN THE PROSTATE GLAND.

2849. The lower part of a Bladder, with the Prostate Gland, laid open from the front. The right lobe of the prostate gland is enlarged by the growth within it of a tumour, over which its substance and capsule are thinly spread out. The tumour is of regular, roundly-oval shape, measuring about one and a half and two inches in its diameters, closely invested by the gland, yet easily enucleated from it. (A portion of it thus separated is suspended above the bladder.) Its cut surfaces show a very firm, dense texture, like that of a prostate gland, with numerous small cysts. The microscopic structures had the same resemblance to those of a natural prostate gland. The prostatic part of the urethra is flattened by the projection of the tumour, and curved towards the left side. A piece of glass marks a passage made with a catheter through the right lobe of the prostate, by the side of the tumour. The left lobe of the prostate appears to be of natural size. XXIX. 24

From a man, 51 years old, who, for two years before his death, had increasing difficulty in passing urine. Complete retention at length ensued, and was relieved with catheters, some or all of which passed through the prostate in the tract indicated in the specimen. After seven days, acute peritonitis, commencing apparently at the bladder, proved quickly fatal.

2850. A Tumour, bisected, which was removed from the interior of a urinary bladder. It was attached just behind the orifice of the urethra, over the middle lobe of the prostate gland, by a band or pedicle, composed of mucous membrane and muscular fibres, and measuring about half an inch in width and one-eighth of an inch in depth and thickness. The tumour (cut from the pedicle) is thinly invested with mucous membrane, like that of the bladder. It is of somewhat oval form, and measures from one and a half to two and a half inches in its several diameters. On its cut surfaces the tumour appears formed of very firm, tough, whitish substance, like that of prostate gland. It is intersected by shining white circling bands of fibres, which divide it into close-packed lobes, and it contains many small round and oval cysts, lined with smooth membrane. The microscopic appearances of the mass were exactly similar to those of the prostate gland, including both gland-structures and well-formed smooth muscular fibres. The tumour may, therefore, be regarded as one of the same kind as the preceding, which having grown from the prostate gland became pedunculated, and projected into the bladder. XXIX. 25

The patient, 64 years old, was, for the last four years of his life, unable to pass urine without the help of the catheter. The tumour, as first seen after death, was described as "lying loose in the bladder, only connected to it by a pedicle, moving on this like a hinge, and, when pressed forwards, obstructing the orifice of the urethra."

Presented by Mr. Wyman.

2851. A polypoid fibrous Tumour, which is attached by a narrow pedicle to the interior of the neck of the bladder. Above is suspended a portion of the tumour removed by section. The coats of the bladder are considerably thickened. XXIX. 29

2852. A Bladder, with a uniformly enlarged Prostate Gland. Numerous warty growths of a soft substance are connected with the third lobe of the enlarged

prostate, and thence extend, covering the mucous membrane of the bladder, as high as the orifices of the ureters. XXIX. 13

2853. A Bladder and Prostate Gland, from a child, 5 years old. The prostate gland is considerably enlarged both in its lateral and middle lobes. The natural structure of the gland has entirely disappeared, and its place is occupied by medullary substance, a portion of which is of dark-greyish colour, perhaps from the deposit of melanotic matter. There are also similar dark-grey deposits in the cellular tissue around the prostate and the neck of the bladder. XXIX. 17

The child had been subject for four months to irritability of the bladder. Ten days before death it had retention of urine, which was succeeded by paralysis of the bladder. The case is described by Mr. Stafford, in the *Medico-Chirurgical Transactions*, vol. xxii, p. 218. London, 1839.

Presented by R. A. Stafford, Esq.

2854. The Bladder and Prostate Gland of a child, 4 years old. None of the natural structure of the prostate can be discerned: in its place there is a mass of soft, white, obscurely fibrous, and shreddy, medullary substance, nearly spheroidal in form, and four inches in diameter. This mass projects backwards between the bladder and rectum, raising the pouch of peritoneum between them to the level of the upper part of the bladder: it must have nearly filled the pelvis. Its posterior and lower part is either superficially ulcerated or has been broken. The peritoneum covering its upper part is extremely congested. XXIX. 22

CALCULI IN THE PROSTATIC DUCTS.

2855. Prostate Gland, in which numerous small cells are filled by brown calculi. XXIX. 4

2856. A similar specimen, but with smaller cells and calculi. XXIX. 5

SERIES XL.

DISEASES AND INJURIES OF THE URETHRA AND PENIS.

STRICTURE OF THE URETHRA.

LINEAR AND ANNULAR STRICTURES.

2857. A Penis with a tight annular strieture one ineh from the orifiee of the urethra.

From a man, who died with acute suppurative inflammation of the kidneys.

He was at the time attending the Hospital for a stricture, which only admitted of the passage of a catgut bougie.

A drawing of the kidneys is preserved No. 316.—See *Post Mortem Book*, vol. viii, p. 84, and *John Ward Book*, vol. vii, p. 26.

2858. Seetion of a Urethra, in whieh there is a strieture in its spongy portion, about two inehes anterior to the bulb. The strieture is annular, oeeupying only a small portion of the length of the urethra: the induration and eontraction of the eanal being marked by an opaque-white line. The urethra behind the strieture is dilated. xxx. 3

2859. A lateral seetion of a Bladder and Urethra. There is an annular strieture of the urethra immediately before the bulb. The bladder is large, and its museular eoat is hypertrophied; the faseieuli extending from the ureters to the prostate gland are remarkably developed. xxx. 9

2860. A Penis, exhibiting a strieture in the spongy portion of the urethra, about four inehes from the external orifiee. Half an ineh of the length of the eanal is almost obliterated; and the tissues around this part are thiekened, indurated, and eontraeted. In the rest of its extent the urethra appears healthy. xxx. 1

2861. A Penis, exhibiting two annular strietures of the urethra, one situated about two inehes from the external orifiee, the other just anterior to the bulb. The mueous membrane is generally thiekened, and is in many parts superfieially uleerated. xxx. 23

2862. The Cast of an Urethra in whieh there was a slight annular strieture immediately behind the bulb. xxx. 14

Vide No. 2881.

STRICTURE BY THICKENING AND CONTRACTION OF A CONSIDERABLE PORTION OF THE CANAL.

2863. A Bladder and Urethra. There is a strieture in the urethra about an inch anterior to the bulb. The mucous membrane has been separated from the eorpus spongiosum in the situation of the strieture, to show the thickening and condensation whieh its tissue has undergone at this part. The museular coat of the bladder is thiekened, and the ureters are dilated. xxx. 19

2864. A Urethra, the whole of the mucous membrane of which is thickened and indurated. There are, besides, two strictures, one immediately before the bulb, the other about two inches from the external orifice. XXX. 22

"BRIDLE" STRICTURE.

2865. A Penis, in which the canal of the urethra is traversed by eleven distinct cords or bands. These bands are flat and narrow, from the eighth of an inch to half an inch in length, and attached at both their extremities to the wall of the urethra. They lay close to the wall of the canal, but are now raised by portions of glass passed beneath them. They are all situated between the prostatic portion of the urethra and the part about two inches anterior to the bulb. XXX. 37

From a man in whom instruments had been very frequently passed for the cure of stricture.

For other specimens of stricture, *vide* Nos. 2866 to 2868, 2870 to 2875, 2877, 2879 to 2883 in this Series; and 3215 in Series L.

CONSEQUENCES OF STRICTURE.

DILATATION OF THE CANAL BEHIND THE STRICTURE.

2866. The anterior part of a Penis, with a stricture in the spongy portion of the urethra, about two inches from the external orifice. Behind the stricture the canal is dilated; its walls also are thickened, and penetrated by an ulcerated aperture which leads into a fistulous passage extending to the integuments. XXX. 2

2867. Sections of a Urethra and Bladder. There is a stricture of the urethra about three inches anterior to the bulb, and behind it the whole of the urethral canal is dilated. At the fundus of the bladder is a small cyst, formed by the protrusion of the mucous membrane between the hypertrophied muscular fibres. XXX. 7

Vide Nos. 2871, 2873.

ULCERATION OF THE URETHRA AT, AND BEHIND THE STRICTURE.

2868. A Bladder and Urethra. There is a stricture in the urethra immediately anterior to the bulb. From the bulb to the bladder the mucous membrane of the urethra is ulcerated in some situations, and in others is covered by projecting granulations with calculous matter deposited on them. The bladder is thickened and exceedingly contracted; and its mucous membrane, raised in deep ridges and folds, is superficially ulcerated and nearly covered by calculous matter. XXX. 13

2869. A Bladder and Urethra. A large portion of the urethra anterior to the bulb is superficially ulcerated, and two deeper ulcerations extend from this part into the adjacent tissues. One of the openings thus formed communicates with a sac enclosed by the indurated cellular tissue around the urethra. The muscular coat of the bladder is greatly hypertrophied, and its mucous membrane appears thickened and indurated; its cavity was lined throughout by a thick layer of lymph, upon which calculous matter was deposited. The lymph was but loosely connected with the mucous membrane of the bladder, from which it has been separated and reflected in a continuous layer. XXX. 12

2870. Section of a Penis, exhibiting a stricture of the urethra at the junction of its membranous portion with the bulb. The mucous membrane is ulcerated at the seat of the stricture. XXX. 4

2871. A Bladder and Urethra. There was a stricture of the urethra about two inches from its external orifice. At the situation of the stricture, and immediately behind it, an ulcer nearly half an inch in diameter has penetrated the wall of the urethra, and permitted the escape of urine into the surrounding

tissues. The whole length of the urethra between the ulcer and the bladder is dilated; its mucous membrane is thick, rough, and dark-coloured; and in the membranous portion is superficially ulcerated. The muscular coat of the bladder is hypertrophied, its mucous membrane is dark, and its surface is covered in many parts with flakes of lymph. xxx. 33

Vide Nos. 2866, 2872, 2873, 2874, 2877.

EXTRAVASATION OF URINE; URETHRAL ABSCESS, AND FISTULA.

2872. A Bladder and Urethra, opened from the superior and anterior part. The mucous membrane of the bladder and urethra is thickened in its whole extent, but no part of the urethra appears especially contracted. Several small ulcerated openings have been formed in the spongy part of the urethra, near the bulb. The cut surfaces of the corpus cavernosum exhibit a sloughing appearance, in consequence of the escape of urine into it. The glans penis has been entirely removed by ulceration. xxx. 10

2873. A Penis, exhibiting a stricture of the urethra two inches and a half from the external orifice. Behind the stricture, the whole length of the urethra is greatly dilated; its walls are thickened, and its mucous membrane is deeply folded, and, in parts, superficially ulcerated. There are several small sacs, like the cavities of abscesses, close to the urethra: two of these communicate with its canal near the prostate. xxx. 21

2874. Section of a Penis, exhibiting a very narrow stricture in the spongy portion of the urethra, about three inches from the external orifice. Ulceration of the urethra has taken place at the seat of the stricture, and has extended through the indurated tissues around it, and communicates with numerous fistulous passages in the parts between the stricture and the bladder. xxx. 5

2875. A lateral section of a Bladder and Urethra. A stricture of the urethra, commencing an inch anterior to the bulb, is continued, with general thickening and induration of the tissues, to the prostate gland. In front of the stricture the canal of the urethra appears to be lost in a small circumscribed cavity, from which five or more fistulous passages lead into the adjacent parts; one of these passages extends to the perineum. The muscular coat of the bladder is hypertrophied. One of the ureters is dilated into a small cyst at its termination. xxx. 8

2876. A Bladder and Urethra, exhibiting some of the effects of stricture. A large opening exists in the urethra at the junction of the bulb with the membranous portion; it was formed by ulceration, and through it urine was effused into the perineum. The ulceration involved a stricture which had long existed at this part; the canal of the urethra is of the natural calibre behind the opening. The bladder is contracted, and its muscular coat is hypertrophied. xxx. 32

2877. A Bladder and Urethra. There is a stricture of the urethra at the bulb, and in the anterior part of its membranous portion. The mucous membrane has ulcerated in the situation of the stricture. The mucous membrane of the bladder is thickened and formed into irregular eminences or ridges, which are covered by calculous matter. Ulceration has taken place through the prostate and the adjacent coats of the bladder at its lower and back part, and the aperture thus formed leads to a large irregular cavity, resulting from the effusion of urine into the cellular tissue between the bladder and the rectum. xxx. 16

2878. A Bladder and Urethra. Sloughing of the urethra has destroyed five inches of its walls, with the adjacent corpus spongiosum. Behind the part

which has sloughed, the canal of the urethra is lost in a large irregular cavity, like that of an abscess. A large pouch, formed by the protrusion of the mucous membrane between the muscular fibres, is connected with the front of the bladder. xxx. 17

HYPERTROPHY OF THE BLADDER.

Vide Nos. 2368, 2402, 2859, 2863, 2867 to 2869, 2871, 2875 to 2879.

DILATATION OF THE URETERS AND PELVIS OF THE KIDNEY.

Vide Nos. 2368, 2863.

ACCIDENTAL COMPLICATIONS OF STRICTURE.

CALCULI IMPACTED IN THE URETHRA.

2879. Section of a Bladder and Urethra. A disk-shaped calculus, seven-tenths of an inch in diameter, is fixed in the bulbous portion of the urethra. There is a slight stricture of the urethra immediately in front of the calculus; and around and behind it the canal is dilated and superficially ulcerated. The coats of the bladder are greatly thickened. One of the lateral lobes of the prostate gland is enlarged. xxx. 11

The preparation is engraved in Dr. Marcet's "Essay on Calculous Disorders," Pl. V. London, 8vo., 1817.

2880. Part of a Penis and Prostate Gland, with the Urethra laid open. An inch in front of the membranous part of the urethra a stricture exists, through which the continuity of the canal cannot now be traced, but which appears to have been extremely narrow. The urethra posterior to the stricture is dilated, and, immediately behind the contraction, a calculus, half an inch in diameter, is lodged in the most dilated part, projecting towards the perineum. The obstruction caused by the calculus, added to that of the stricture, appears to have completely closed the urethra. By the side of the stricture is a large cavity that was filled with fœtid pus, and extends into the perineum, where it is laid open by a long incision. xxx. 39

The patient was about 45 years old, and had had stricture many years. Sudden retention of urine occurred, followed by rapid swelling and suppuration in the perineum. An incision was made into the perineum, and fœtid pus was let out, but the calculus was not felt, and the retention was only partially relieved.

EFFECTS OF THE TREATMENT OF STRICTURE.

FALSE PASSAGES.

2881. A Penis, with a portion of the Bladder. The mucous membrane of the whole of the urethra is thickened. About two inches from its external orifice, the canal is contracted, forming a close annular stricture, behind which it is dilated in its whole length. From the stricture, a false passage, formed by catheters, is continued along the side of the urethra, in the corpus spongiosum, and through the prostate gland into the bladder. xxx. 18

2882. A Penis, exhibiting a stricture of the urethra about an inch anterior to the bulb. The mucous membrane is thickened and indurated in the situation of the stricture, and the canal behind it is much dilated. A bristle is introduced into the stricture, and another into a false passage formed by a catheter, which extends from the front of the stricture for a short distance along the outer side of the urethra. xxx. 20

2883. Part of a Penis, exhibiting a stricture in the urethra, about an inch anterior to the bulb. A false passage has been made by a catheter through

the wall of the urethra into the corpus cavernosum, in which it extends for nearly two inches by the side of the urethra and terminates in a large irregular cavity near the bulb. A small calculus is fixed in the dilated orifice of one of the prostatic ducts. XXX. 6

Vide No. 2402, in Series XXIX.

DISEASES AND INJURIES OF THE GLANS PENIS AND PREPUCE.

SIMPLE AND SYPHILITIC ULCERATION.

2884. A Glans Penis, exhibiting a large ulcer with a ragged irregular surface extending from below into the urethra. XXX. 25

2885. Sections of a Penis, in which the glans and a part of the corpus cavernosum have been removed by ulceration. XXX. 26

Vide No. 2872.

2886. A Glans Penis, showing the recent scar of a syphilitic sore, which has destroyed the frenum. The scar is seen by the injection to be more vascular than the normal mucous membrane of the glans.

TUBERCULAR DISEASE.

2887. Section of a Penis, in which tubercular matter is infiltrated through the whole of the corpus cavernosum. On a small separated portion, the fibrous covering has been reflected to show that it is unaltered. The cavity of the vena dorsalis penis is filled with tubercular matter. The corpus spongiosum and urethra are sound.

The kidneys were affected with tubercular disease.

TUMOURS, &c.

WARTS.

2888. Portion of a Penis, with warts upon the prepuce and the surface of the glans. Previous to the growth of these, the glans appears to have been protruded through an ulcerated aperture in the lower part of the prepuce. XXX. 27

2889. Portion of a Prepuce, from a man who suffered for a long time from a syphilitic sore. There is a ring of small warts around the preputial orifice.

2890. Sections of a Penis, exhibiting warty growths, springing from the whole inner surface of the prepuce. The glans, corpus cavernosum, and urethra are sound, except in one situation where ulceration has commenced upon the surface of the glans. XXX. 29

EPITHELIOMA.

2891. A Prepuce removed by circumcision and laid open. The boundary between the outer and inner surface of the prepuce is marked by a nearly vertical line along the middle of the specimen. By the side of this line, and covering a large portion of the orifice and inner surface of the prepuce, is a circumscribed oval ulcer, with elevated hard edges, which presented the characters of cancerous ulcers of the skin. The exterior of the prepuce is healthy, except that it is wrinkled and contracted towards the margin of the ulcer. XXX. 38.

From a middle-aged gentleman, who had congenital phimosis, and was unaware of the time at which the disease commenced.

2892. Sections of a Penis, in which nearly the whole of the inner surface of the prepuce is covered by a large growth of firm, apparently medullary, substance.

Part of the surface of the growth is ulcerated and shreddy. The glans penis appears healthy, but is compressed by the morbid growth. XXX. 28

2893. The greater part of a Penis, removed together with a very large, soft, warty growth, which covers all its upper and anterior parts, and appears to have originated in the skin and prepuce. The glans and body of the penis are healthy. XXX. 35

Presented by William Slyman, Esq.

2894. Section of the end of a Penis, injected. The glans is converted into a lobulated mass of epithelioma; the growth is distinctly limited by the fibrous septum between the glans and corpora cavernosa. A piece of glass is placed in the urethra.

The growth presented the ordinary characters of cancer on examination with the microscope. From a man, aged 64 years, who suffered from a congenital phimosis. The tumour had been growing for a year.—See *Rahere Ward Book*, vol. vi, p. 299.

2895. Portion of a Penis, in which the corpus cavernosum is converted, probably by cancerous disease, into a firm substance. The glans penis with a part of the altered corpus cavernosum is deeply ulcerated. XXX. 24

2896. Portion of a Penis, in which a large part of the prepuce, glans, and corpus cavernosum has been destroyed by cancerous ulceration. The elevated, everted, and sinuous margins of the ulcer, and its irregularly indurated base, are strongly marked. XXX. 30

2897. The end of a Penis, which was removed from a young man in consequence of extensive carcinomatous ulceration of the glans and prepuce. The borders of the ulcer are hard, elevated, everted, and sinuous; its base is irregular and covered by granulations. XXX. 34

2898. Sections of a Penis, which was removed in consequence of extensive cancerous disease. In the lower half of the prepuce is a mass of firm cancer two inches in diameter, and nearly oval in form. The part of this mass which is near the glans has ulcerated deeply, and the lower half of the glans itself has been similarly destroyed. The remains of the glans and the anterior third of the corpus spongiosum urethræ appeared filled with cancerous substance; and there is a nearly isolated round mass of cancer in the corpus cavernosum just behind the glans. XXX. 36

From a man, 75 years old. The disease had been eighteen months in progress. The penis was cut off close to the pubes. A week after the operation the patient died with erysipelas. After death the inguinal and lumbar glands were found enlarged with cancerous disease; there were several small, white, hard cancerous tumours in the lungs; and pus was deposited in the wrist, elbow, and several other joints, and in the midst of the cancerous glands.

2899. Portion of a Penis. The glans and prepuce have been in great part destroyed by epithelioma. Imbedded in the body of the organ, and enclosed in a sort of capsule, by which it is isolated from the surrounding textures, is a large mass of cancer.

Removed by amputation from a gentleman, aged 65 years, in whom it had been growing five years.

2900. A portion of Skin removed from the dorsum of the penis of a chimney-sweeper, and exhibiting an oval elevated epitheliomatous ulcer, with a hard and irregularly nodulated surface. Beneath the ulcer the tissue down to the corpus cavernosum is as hard as cartilage. XXX. 26

2901. Cancerous ulceration of the Bladder with cancerous infiltration of the Penis, from a man, aged 42 years. The main symptoms during life were intense pain and difficulty in micturating through the greatly distended penis. On

the lower surface of the bladder, corresponding to the aperture of the right ureter, is a large, deep, oval ulcer, with irregular ragged edges. The posterior and upper wall of the bladder was broken down, and its contents were prevented from extravasation into the abdominal cavity only by recent circumscribed peritoneal adhesions. The urethra was sound. The spongy and cavernous portions of the penis are infiltrated throughout with a firm homogeneous material of a dull white colour, exuding a fluid on section. It presented the appearance and minute structure of hard cancer. The glans was the seat of superficial cancerous ulceration. The right kidney consisted merely of a dilated sac. The left was enlarged, but natural. There were cancerous deposits with the same anatomical characters, though softer, in the lungs, bronchial and lumbar glands; also between the periosteum and the front surface of the tibia, amongst the bones of the tarsus of the same leg, and in the sheath of the peronei tendons. The disease of the penis was of eighteen months' duration. The tumours in the skin had existed eight months. During life, there was no evidence of any of the other deposits.

INJURIES TO THE PENIS.

2902. This piece of string was tied round the root of his Penis by a boy aged 9 years. It passed into the substance of the organ by ulceration, dividing the urethra. The tissues subsequently healed over it, and the canal of the urethra was imperfectly restored, a stricture resulting. The string was removed by operation. xxx. 40

SERIES XLI.

DISEASES OF THE OVARIES.

CIRRHOSIS.

2903. Sections of two Ovaries. They are contracted, and their structure is dense and fibrous; Graafian vesicles are visible.

From a woman, aged 35 years, who menstruated regularly until two years before death, when the menses ceased abruptly.

Presented by Dr. Matthews Duncan.

CYSTIC TUMOURS OF THE OVARY.

2904. A simple Ovarian Cyst, removed during life. A bougie is placed in a portion of the Fallopian tube connected with its walls, which are uniformly thin and smooth.

The cyst contained twenty-seven pints and a half of fluid. It was removed after its contents had been evacuated through a small incision in the abdominal walls. The collapsed cyst having been withdrawn from the abdomen through this incision, a ligature was tied round the Fallopian tube and other parts connecting it with the uterus, and it was cut off. The patient completely recovered.

Presented by Thomas King, Esq.

2905, 2905a. Ovarian Cysts distended and dried. XXXI. 27, 28

2906. The Ovaries taken from a woman, aged 42, an inmate of Bethlehem Hospital. She had ceased to menstruate for three or four years. They are laid open, and in the interior of each are numerous small simple cysts. They all contained fluid.

2907. An Ovary in which there is a small cyst, the walls of which, by the deposition of earthy matter, have become bone-like. XXXI. 19

2908. Sections of two Ovaries. Both of them are enlarged to about four times their ordinary size, and contain numerous round cysts, each of them one-third to half an inch in diameter, which were full of variously coloured serous and grumous fluids. XXXI. 21

The change appears to constitute an early stage of the disease, by which some of the large multilocular cysts of the ovaries are formed. The cysts here shown have the characters of enlarged Graafian vesicles.

2909. Portion of a large Ovarian Cyst. XXXI. 2

2910. Portion of a Cyst originating in the left Ovary. It communicated with the ileum by a small aperture between four and five inches above the cæcal valve. Some weeks before death, after the discharge of a large quantity of fluid per anum, the abdominal tumour diminished in size, and the dulness to percussion over its region was replaced by tympanitic resonance.

Vide also Nos. 3360, 3361 in Series L.

PROLIFEROUS CYSTS.

2911. An Ovary, of which one half appears healthy, while, in the place of the other half, there are three cysts completely partitioned from each other and mutually compressed. A papillary growth springs from the wall of the lowest cyst. XXXI. 1

2912. A large Unilocular Proliferous Cyst of the Ovary; there are two small secondary cysts also proliferous at one part of the cyst-wall. Scattered over a considerable area of the inner surface of the cyst are numerous cancerous papillary growths, both discrete and aggregated into masses. The solitary growths present every variety in size, the largest being about the size of a small walnut; they are broad, rounded, and have a very slender pedicle. There are also irregular papillated masses covering a considerable surface. The cyst had no pedicle, and there were no adhesions; it contained a dark brown fluid.

Microscopic Examination of one of the Papillary Growths.—It was attached to the cyst-wall by a pedicle of fibrous tissue. From this thin trabeculæ of connective tissue branched out, again giving off finer secondary branches, which by anastomosing formed irregular spaces, mostly of an elongated shape. The margins of the spaces were covered by, and also inclosed round, granular cells, varying much in size, and containing a small nucleus. The centre of the spaces was either empty, or filled with colloid material. Among the innermost of the circumferential layer of cells, large hyaline nucleated cells were seen, in some cases signet-ring, and in others dissolving and merging into the colloid material occupying the centre of the alveolus; these forms appeared to be produced by colloid degeneration of the cells first described.

From a woman, aged 60. She had noticed an enlargement of her abdomen for fourteen months. Ovariotomy was performed, from which she recovered.—See *Martha Ward Book*, March, 1879.

Microscopic section, No. 127.

2913. A portion of a large Ovarian Cyst, with tumours and secondary cysts attached to its inner wall. The wall of the principal or outer cyst is from half a line to a line in thickness, and is composed of a tough fibrous tissue. The two largest tumours within it are oval in form; one measures five inches in its chief diameter, the other three inches; and each of them is attached by a small portion of its surface. Their sections show that they consist of medullary matter, in which are many cells filled with fluid and a gelatinous or mucous substance. There are several other tumours or cysts of small size attached to the internal walls of the great cyst, and full of fluid or medullary matter.

XXXI. 20

From a woman, about 35 years old. The great cyst in which the tumours are inclosed had been several times tapped, and large quantities of serous fluid had been removed. It is probable that the malignant tumours had formed late in the course of the disease; for in the earlier periods, when the cyst was completely emptied by tapping, no solid masses could be felt in it.

DERMOID CYSTS.

2914. Portion of Bone, in which an incisor and two molar teeth are fixed in cavities like alveoli. It was imbedded in the wall of an ovarian cyst.

XXXI. 22

2914a. A portion of a Secondary Cyst, from a large ovarian cystoma. A hairy pendulous growth, from which the cusp of a tooth projects, is attached to the cyst-wall. A small plate of bone is felt within the wall at the point where the pedicle is attached.

2915. A Dermoid Cyst, containing fat, hairs, and teeth.

Presented by Dr. Matthews Duncan.

2916. A Cyst, as large as a goose egg, in the position of the right ovary. It contained a brownish-yellow creamy fluid, and a mass of cheese-like material, without hair or fat, which is suspended in the bottle; probably an inspissated

purulent collection. The cyst-wall is inverted, to show a small detached cyst, which is connected to the former by two slender threads. The right Fallopian tube is normal, and is attached to the cyst. The opposite ovary, and the uterus, are normal.—See *Post Mortem Book*, vol. vii, p. 372. XXXI. 41

2917. Portions of a large Ovarian Cyst, the principal cavity of which contained fatty matter with long slender hairs. Part of the cyst-wall is thick, dense, and irregularly laminated; another part is thin, and on this part a small portion presents a surface like that of ordinary cutis. Portions of fat and hairs are still attached to some parts of the interior of the cyst, while in others teeth, with well-formed crowns and short fangs, are imbedded. XXXI. 8

2918. A mass of Fatty Matter and Hair, closely mixed as if rolled and matted together, which was removed from the ovarian cyst last described. XXXI. 9

2919. Another portion of the same Ovarian Cyst. On its inner surface is an elevation formed by adipose tissue, and covered by a dense layer which exactly resembles human skin placed on its subcutaneous fat; the skin presents on its free surface the orifices of numerous close-set hair follicles. Similar orifices are less closely placed on the adjacent smooth surface of the cyst, and from many of them, both on this surface and on that of the skin-like layer, pale slender hairs, which have well-formed bulbs, project. XXXI. 10

The three preceding preparations were taken from a lady, 63 years old, who died shortly after the removal of the cancerous breast, preserved in No. 3165, Series XLVIII.

2920. Dermoid Cyst of the Ovary, containing fat and hairs.

Presented by Dr. Matthews Duncan.

2921. Portion of a large Proliferous Cyst, which was connected with the ovary of an old woman. The walls of the cyst are composed of several layers of a very dense tissue. Its internal surface is thickly set with papillary growths and groups of small pedunculated and very thin-walled cells, containing a limpid fluid. Its cavity was filled by a thick brown fluid, of the consistence of cream, mixed with numerous short stiff hairs. XXXI. 18

2922. A Cystoma (probably Dermoid) of the left Ovary, about the size of an orange. The Fallopian tube courses along the upper and posterior surface of the cyst, which contained some sebaceous-like material. The right ovary is contracted.

From a woman, aged 43 years, who died of morbus cordis.—See *Post Mortem Book*, vol. viii, p. 97.

Vide No. 3370, in Series L.

PAROVARIAN CYST.

2923. A Parovarian Cyst, consisting of one large and one small loculus; a small portion of the Fallopian tube is attached to the upper part of the cyst.

Removed by operation from a lady, aged 25 years, who two years before sought advice on account of increasing enlargement of the abdomen. A fluctuating tumour occupied the lower part of the abdomen, extending to the umbilicus. On bi-manual examination it was found to be so closely connected with the cervix uteri that it was believed to be possibly a gravid uterus. The menstruation was, however, stated to be regular. Three months later the tumour had greatly increased in size, and many ounces of clear fluid were evacuated by tapping; the fluid contained only a trace of albumen, and was loaded with chlorides. After an interval of six months the cyst had again filled, but was ruptured by the patient accidentally falling upon her abdomen. The tumour soon after reappeared, and ovariotomy was performed with a fatal result.

HYDATID CYST IN THE OVARY.

2924. Part of a large Cyst connected with an Ovary, and the membranes of some Hydatids which it contained. The greater part of the cyst is composed

of a tough, fibrous tissue, but portions of its walls are as hard as cartilage, and have small plates of bone-like substance in them. XXXI. 2

From the same patient as Nos. 541, 542, in Series I.

SOLID TUMOURS OF THE OVARY.

2925. A spherical Fibrous Tumour, connected to the left ovary by a narrow pedicle. It is divided by a longitudinal section. Before removal the tumour lay in the peritoneal pouch between the uterus and rectum. The bottom of the pouch is forced downwards hernia-like, to a considerable extent. There were no symptoms of its presence during life. It was taken from a woman, aged 55 years. There are also some small subperitoneal uterine fibroids. XXXI. 30

2926. One-half of a Tumour, which was removed from the situation of the left ovary of a woman, aged 55 years. It is composed of loose fibrous tissue. A similar, though somewhat smaller growth, occupied the situation of the right ovary. She had been conscious of the existence of some tumour of the abdomen for two years.

2927. A Uterus and Ovaries. The place of each ovary is occupied by a large, hard, oval tumour, nodulated on its external surface. The tumours consist of a very dense and hard, obscurely fibrous tissue, and upon the surface, as well as in the interior of each, there are small membranous cysts, which contained a serous fluid. The uterus is healthy. XXXI. 17

From a woman, 38 years old, whose breast had been removed three years before death on account of hard cancer.

Presented by Richard Allen, Esq.

2928. A Uterus and Ovaries. The ovaries are altered in form; their natural structure is removed, and its place is occupied by a very soft melanotic matter. There are also some small circumscribed deposits of melanotic matter in the peritoneum covering the uterus. XXXI. 16

From a young woman in whom melanosis existed in many other organs. The primary tumour is in Series L, No. 3315.

2929. Part of a Colloid Cancer which had originated in an ovary. The soft colloid material has been washed away from the loculi which contained it, and these, with their walls forming the more solid portion of the growth, remain, communicating freely one with another. Their walls, of an opaque white colour, are composed of a dense, imperfectly-formed fibrous tissue. XXXV. 112

OVARIOTOMY.

2930. The Fundus of a Uterus and adjacent structures. On the left side the stump of the pedicle of an ovarian tumour is seen. Between the remains of the Fallopian tube and ligament of the ovary is a small, discoloured, ragged cavity, in which the portion of silk ligature preserved in following specimen was found. The right ovary is firm and fibrous. Ovariotomy was performed one year before the patient's death.

2931. The remains of the Silk Ligature found in the pedicle preserved in the preceding specimen. The knot and frayed-out ends attached to it alone remained unabsorbed.

2932. Portions of Silk Ligature discharged from a sinus remaining after ova-

riotomy. The ligatures are loosened and brittle in texture, but show little or no appearances of absorption. The larger portion of ligature was discharged six months after the operation, the smaller twelve months after. The sinus closed in three weeks after the latter portion was discharged.

Presented by Thomas Smith, Esq.

2933. An unaltered Silk Ligature, which was discharged from a sinus in the abdominal wall of a woman three months after being applied to the pedicle of an ovarian tumour.

Presented by Mark Vernon, Esq., of Horsham.

SERIES XLII.

DISEASES OF THE UTERINE APPENDAGES.

CYSTS CONNECTED WITH THE FALLOPIAN TUBES.

2934. Two Ovaries, with their Fallopian tubes. A thin-walled membranous cyst, which contained a transparent fluid, is connected with each Fallopian tube near its fimbriated extremity, but does not communicate with its canal. Probably they are hydatids of Morgagni. XXXI. 11

Vide No. 3367, in Series L.

DROPSY OF THE FALLOPIAN TUBE.

2935. A Fallopian Tube, the extremity of which is distended into a pyriform sac, which contained upwards of half-a-pint of transparent fluid. The rest of the tube is dilated, but in a much less degree, and is elongated and tortuous. The walls of the sac appear to have been very vascular. XXXI. 15

Presented by W. T. Rogers, Esq.

2936. Part of a Uterus, with a Fallopian tube, the end of which, after the closure of a portion of its canal, was distended by a clear fluid into an elongated pyriform sac. A bristle is passed from the uterus along the portion of the tube, which retained its natural condition. XXXI. 4

2937. Dropsy of left Fallopian Tube. A delicate layer of false-membrane connects the posterior wall of the uterus with that of the dilated portion of the tube. XXXI. 5

Vide No. 3362, in Series L.

TUBERCLE OF THE FALLOPIAN TUBE.

2938. The Uterus laid open, and the Fallopian Tubes of a woman, aged 53, who died from tubercular disease of the lungs and intestines. The Fallopian tubes are the seat of tubercular disease. To the external wall of the uterus, on the left side, a pedunculated fibroid tumour is attached.

ABSCESS IN THE BROAD LIGAMENT.

2939. Specimen showing an abscess in the broad ligament, which is stuffed with hair.

Presented by Dr. Matthews Duncan.

HÆMATOMA OF THE BROAD LIGAMENT.

2940. The Uterus and its appendages. Between the layers of the right broad ligament is a globular cyst, about as big as a walnut, the wall of which, in the recent state, was seen to be formed by the separated layers of the ligament; its cavity was filled with quite recent blood coagula. On the anterior aspect of the cyst were two small, recently formed, irregular openings.

From a patient, aged 25, who, while in the Hospital for the treatment of warts on the vulva, was suddenly attacked with the symptoms of internal hæmorrhage and died in twelve hours. At the post mortem examination the cavity of the peritoneum contained five pints of recently

effused, loosely coagulated blood; and dark fluid blood oozed slowly from the openings in the cyst above described. The interior of the uterus, along with all the other parts of the body, was very pale. A very careful examination of the blood-cyst failed to discover the source of the hæmorrhage. There was no evidence of the existence of extra-uterine pregnancy, and no ruptured vessel was detected. It was uncertain whether the patient was menstruating at the date of the attack.

FIBROUS TUMOURS CONNECTED WITH THE BROAD LIGAMENT.

2941. A Fibrous Tumour, the size of a hen's egg, attached to a round ligament.

Presented by Dr. Matthews Duncan.

2942. A large oval Tumour, lying between the folds of the right broad ligament, and below the round ligament. The section is white, firm, fibrous, and shows numerous irregular loculi, which contained yellowish serum. The tumour was found on microscopic examination to consist solely of dense fibrous tissue.

Removed from the body of a woman, aged 63 years. On opening the abdomen the tumour projected above the symphysis pubis; it lay above the uterus and bladder, and in front of the right ovary. The ovaries and other pelvic viscera were normal.—*Post Mortem Book*, vol. vii, p. 214.

A microscopic section is preserved, No. 129.

SERIES XLIII

DISEASES OF THE UTERUS.

DISPLACEMENTS.

ANTEFLEXION.

2943. Model of a Section of an ill-developed Uterus, affected with extreme anteflexion. There is no obliteration of the canal, and no thinning of the uterine wall at the point of flexion.

2943a. Cast of the same Uterus entire.

Presented by Dr. Matthews Duncan.

2944. A Uterus, with acute anteflexion and a slight lateral inclination. A dimple on the mucous membrane is the only indication of the os; there is no communication between it and the cervical canal. The cavity of the body of the uterus appears normal.

RETROFLEXION.

2945. Sections of a Uterus, with a well-marked retroflexion.

From a woman, aged 32 years. She did not complain of any uterine trouble.—See *Post Mortem Book*, vol. viii, p. 117.

PROCIDENTIA.

2946. A Uterus, with part of the Vagina, exhibiting a prolapsus of the uterus, with considerable elongation of its neck and enlargement of the portion which projects into the vagina. XXXII. 30

2947. A vertical antero-posterior Section of a Uterus, and of the peritoneal pouches between it and the bladder and rectum, from a case of prolapsus uteri with eversion of the vagina. The os uteri was protruded beyond the labia. Its cavity is elongated. The pouches of peritoneum are very deep, and contained portions of the small intestines which were protruded in them as in a hernia. A bristle is placed in the right ureter. XXXII. 35

2948. The body of the Pubes with the external organs of generation. The vagina is everted, forming a tumour seven inches and three quarters in length, and thirteen inches in circumference at its widest part. This tumour has been laid open and the flap turned upwards; it contains at its lower extremity the uterus and its appendages, the broad ligaments being much thickened and the round ligaments thickened and elongated. At its anterior and upper part is the bladder, which is opened and the tracks of the urethra and ureters are indicated by the coloured directors. Just above, and on the outer side of the everted vagina, is the external opening of the urethra, and at its lower extremity is that of the uterus. The remainder of the cavity was occupied by a portion of small

intestine measuring seven feet eight inches in length, its coils matted together and adherent to the walls of the sac. XXXII. 55

From a woman who had suffered from procidentia uteri for fifteen years. About three weeks before death the procidentia suddenly became more extensive. The tumour could not be reduced, peritonitis ensued, and was the immediate cause of the fatal result.

The case is fully related in the *St. Bartholomew's Hospital Reports*, vol. xi, p. 577.

INVERSION.

2949. A Uterus and its appendages with part of the Vagina. The uterus is entirely inverted, with the exception of the cervix, which, however, does not cause any constriction, the finger passing easily between it and the uterine wall. The openings of the Fallopian tubes into the uterus cannot be discovered on its inverted surface. The peritoneum at the point of inversion is thickened and uneven. The uterine appendages are drawn into the cul-de-sac formed by the inverted uterus. This inversion was irreducible, and the displacement of the uterus caused death, in consequence of frequently recurring hæmorrhage, twenty-nine months after its occurrence. XXXII. 56

The case is reported by Dr. West in the *Proceedings of the Pathological Society of London*, vol. iii, p. 140.

2950. A Uterus and its appendages. The fundus is inverted, and in the sac thus formed a portion of the broad and round ligaments and the Fallopian tubes were found. It occurred after delivery. XXXII. 73

2951. The body of an inverted Uterus excised in the Royal Infirmary of Edinburgh. Case recorded in *Edinburgh Medical Journal* for March, 1877.

Presented by Dr. Matthews Duncan.

Vide No. 3092 in Series XLVI.

ADHESIONS OF THE UTERUS TO THE SURROUNDING STRUCTURES.

2952. A Uterus, with one of the ovaries and the corresponding Fallopian tube turned round and adherent to its surface. The Fallopian tube and ovary are themselves closely united by old adhesions. The opposite ovary and the extremity of its Fallopian tube are also similarly connected, but are not adherent to the uterus. XXXI. 6

2953. A Uterus, with the adjacent parts. As the result of perimetritis, irregular adhesions have formed about the ovaries, Fallopian tubes, and broad ligaments. The left broad ligament is much contracted, and the body of the uterus is thus drawn to the left side, so that its axis is almost at a right angle to that of the vagina. XXXII. 38

Vide No. 2164 in Series XX.

RESULTS OF INFLAMMATION.

DYSMENORRHŒAL MEMBRANE.

2954. A Dysmenorrhœal Membrane, from a woman who for many months had been in the habit of passing a similar membrane at each menstrual period. XXXII. 58

PYOMETRA.

2955. A Uterus. The cervix is affected with epithelial cancer, by which the canal is obliterated. The cavity of the fundus is greatly dilated and was filled with pus.

Presented by Dr. Matthews Duncan.

2956. A Uterus, in the side wall of which a large fibroid is imbedded. In its growth the tumour has bent the uterus laterally, and so encroached upon its cavity, that the cervical canal was shut off from the body. (A portion of

glass now shows their continuity.) The cavity of the body of the uterus, which is greatly dilated, was filled with pus; its walls are thinned; its mucous membrane was intensely vascular. XXXII. 52

Presented by Mr. Brendon.

ATRESIA OF THE CERVIX UTERI.

2957. A Uterus, exhibiting atresia of the cervix. The rest of its cavity is dilated. The extremities of the Fallopian tubes are adherent to the ovaries. XXXII. 13

Vide No. 2944.

HYPERTROPHY OF THE CERVIX UTERI.

2958. A Uterus, of which the body is atrophied and flattened, while the part which projects into the vagina is very large and changed in shape, so as to give the appearance of a tumour of the cervix. XXXII. 31

2959. An Os Uteri and part of an elongated Cervix, removed by operation. The enlargement, due to a hypertrophy of the fibrous tissue contained in these parts, caused such inconvenience to the patient from its induration and projection into the vagina as to necessitate its removal. XXXII. 68

2960. Part of a Cervix Uteri, removed by operation. It is enlarged and hard, and its surface is nodulated. The os uteri is wide and irregularly fissured at its sides. A section of the portion removed displays an interior structure which differs little from the healthy character of the uterine tissue. XXXII. 17

A Drawing is preserved, No. 502.

2961. Simple Hypertrophy, with superficial ulceration of a cervix uteri, removed by the écraseur.

2962. Section of a Uterus and of a firm Fibrous Polypoid Mass which has grown from nearly the whole circumference of its neck. A ligature was placed around the growth near the line of its connection with the uterus; but the death of the woman took place before the ligature had separated. A portion of glass occupies the groove in which the ligature was tied, and it will be observed that this groove, in a part of its extent, is formed in the substance of the uterus, the neck of which is elongated and almost imbedded in the upper part of the polypus. XXXII. 3

TUMOURS.

MUCOUS POLYPI.

2963. A Mucous Polypus of the cervix uteri.

Presented by Dr. Matthews Duncan.

2964. A Uterus, in the walls of which many Fibrous Tumours have grown. One, more than an inch in diameter, is inclosed in the upper and posterior wall, and projects far into the cavity, covered with a thin layer of muscular and mucous tissue. Three, of small size, are seated near the right Fallopian tube, just under the peritoneum. Another polypus, probably mucous, is suspended by a narrow pedicle, half an inch long, from the anterior wall, just within the internal os. This last, projecting and pendulous beyond the os uteri, is elongated, oval, and apparently softened and changed in texture, in consequence of its pedicle having been tied shortly before death. XXXII. 49

The patient was 40 years old, and had suffered with menorrhagia for two or three years. The pedicle of the growth was tied with a double canula; but on the following day dysuria ensued, then retention of urine, then signs of peritonitis, and death occurred on the third day after that of the operation.

Presented by Mr. E. C. May.

2965. A Uterus, with an expanded cavity, to which several Mucous Polypi are attached. XXXII. 40

Presented by Dr. Matthews Duncan.

2966. A Uterus, laid open, showing a Polypus growing from its interior near the fundus. XXXII. 71

2967. The Uterus of a woman, from the substance of which several Fibrous Tumours, of various sizes spring. To the upper part of the cavity, which is laid open, a polypus, probably mucous, is attached, which, hanging down, occupies the whole of the interior.

FIBROUS POLYPI.

2968. A sessile Fibrous Polypus, attached to the lowest part of the body of the uterus.

Presented by Dr. Matthews Duncan.

2969. A Uterus, with a Fibrous Polypus. The form of the tumour makes it probable that it is composed of two fibrous tumours, which were developed in the wall of the uterus, and protruded into its cavity enveloped by a part of the uterine wall, which now forms the pedicle or neck attaching them to its fundus. The larger portion of the tumour lay in the vagina. XXXII. 9

2970. A Uterus, having attached to its partially inverted fundus a true Fibrous Polypus, the body of which is in the vagina. Similar tumours of smaller size have formed, some near the peritoneal surface, and others in the substance of the uterus. The vessels of the uterus have been injected, and the injection has entered the tumours. XXXII. 32

2971. A large Fibrous Polypus of the Uterus. Its pedicle passes through the cervix.

Presented by Dr. Matthews Duncan.

2972. A Uterus, with a firm Fibrous Polypus, attached to the upper wall of its cavity. A ligature was placed around the neck of the polypus eight days before the patient's death. Fatal peritonitis followed. The portion of the polypus below the ligature is intensely congested, and a portion of its surface has sloughed. XXXII. 34

The patient, an elderly woman, had been greatly reduced by hæmorrhage from the polypus previous to the application of the ligature.

A Drawing is preserved, No. 508.

2973. A Uterus, with a very large intra-uterine sessile Fibroid, attached by a base of nearly two inches in diameter, to the fundus and side-wall of its cavity, and thence extending into the vagina. Ulceration has taken place on the most dependent part of the polypus. The walls of the uterus are dilated and thickened around it. XXXII. 10

2974. A fibrous Uterine Polypus.

Presented by Dr. Matthews Duncan.

2975. A Uterus, from which a Fibrous Polypus was removed by ligature eight days before death. A circular ulcer, about half an inch in diameter, in the fundus of the cavity of the uterus, marks the part from which the polypus sloughed. The whole of the tissue of the uterus is swollen. XXXII. 24

The patient, a middle-aged woman, died with acute inflammation of the uterine veins.

2976. The Uterus, laid open, of a woman, aged 35, in the interior of which, near the centre, is seen the remains of a pedicle, from which a Fibrous Polypus was removed by excision. She died of peritonitis five days after the operation. XXXII. 75

DIFFUSE FIBROUS HYPERTROPHY.

2977. Enormous fibrous hypertrophy of the body of a Uterus, without change of shape. There was a cancerous mass in the recto-vaginal space.

From a woman who died of cancerous peritonitis and obstruction of the bowels. The fibrous hypertrophy was originally simple, having existed many years.

Presented by Dr. Matthews Duncan.

UTERINE FIBROIDS (Myo-fibromata.)

2978. A Uterus, showing a minute sub-peritoneal Fibroid, and a smaller pedunculated fibroid.

Presented by Dr. Matthews Duncan.

2979. A Uterus, with two small Fibrous Tumours. One of these tumours was attached by a small pedicle, which has given way. The other is but slightly fixed to the wall of the uterine cavity, which was dilated round it and in close apposition with its surface. XXXII. 8

2980. Section of a Uterus, with a firm Fibrous Tumour imbedded in the middle of its anterior wall. The vessels of the uterus are minutely injected; but none of the injection appears in the morbid growth. XXXII. 6

2981. Portion of a Uterus, with a Fibrous Tumour imbedded in it. The tumour is of oval form, smooth on its external surface, and composed of a firm, dense, greyish substance, partitioned and variously interseeted by white shining bands. It is but loosely connected with the substance of the uterus; and has been partially separated from the uterine wall. XXXII. 7

2982. A Uterus and its appendages. A small Fibrous Tumour projects from its posterior wall, and through this an incision has been made to show the structure characteristic of these growths. XXXII. 67

2983. Portion of a large Fibrous Tumour of the Uterus, which weighed upwards of two pounds. It occupied the whole interior of the organ, the walls of which were expanded around it.

Presented by Dr. Ross.

2984. A Fibrous Tumour of the Uterus, which was pendulous in the vagina, projecting as a polypus through the os uteri. A thin layer of uterine substance which was continued over the whole of the presenting surface of the tumour, is partially reflected from it. XXXV. 79

The tumour was removed by excision. The patient, a middle-aged woman, recovered after the operation.

2985. An Intramural Fibroid of the Fundus Uteri.

The patient died of flooding from the spontaneous opening of a uterine sinus at its lowest part.

The case is described and figured in the *Edinburgh Medical Journal*, 1863.

Presented by Dr. Matthews Duncan.

2986. A Uterus, deformed by the growth of several Fibroids. Their loose capsules are well seen. One ovary is greatly hypertrophied.

Presented by Dr. Matthews Duncan.

2987. A Uterus, the upper half of which is enlarged by the growth of numerous Fibrous Tumours in its walls. One tumour, larger than the rest, projects into the dilated upper part of the cavity of the uterus, and completely fills it; five others are shown, by the section, imbedded in the anterior wall, and many others project upon the external surface of the uterus. The lower half of the uterus is healthy, but elongated. The walls of the portion occupied by the tumours are thick and laminated, like the walls of the uterus in pregnancy. XXXII. 16

2988. A Uterus, with a large Fibrous Tumour in its posterior wall, whence it projects backwards covered by the peritoneal coat of the organ. XXXII. 27

Presented by Dr. Conquest.

2989. A Uterus. A large Intramural Fibroid occupies its posterior wall and projects above the fundus and below the cervix. The portio vaginalis is gone; the cervix opens by a round orifice, which admits the little finger into the uterine cavity, the wall of which (except the posterior wall formed by the fibroid) is hardly thicker than a fold of blotting paper. No connection between the Fallopian tubes and the uterine cavity can be found. The extreme length of the uterine cavity from the os externum is four and a half inches, the extreme breadth two inches. A coronal section of the cavity is spindle-shaped. Both ovaries are atrophied, especially the right. At the junction of the right Fallopian tube with the uterus, and above the tube, is a sub-peritoneal fibroid, the size of a small orange, calcified *en coq*, the calcification extending also into its interior.

2990. An extremely vascular Fibro-Cellular Tumour, removed from the vagina. It was attached by a narrow base to the posterior lip of the os uteri. The hæmorrhage which followed the operation was easily restrained by plugging the vagina. XXXII. 64

2991. The Uterus of a woman, aged 37. To the anterior portion of the fundus a large pendunculated Fibroid is attached. When she was admitted into the Hospital, the tumour completely filled the vagina, and presented a sloughing surface. It was forcibly drawn down and the lower half of it removed. The woman died a week afterwards of peritonitis. The uterus itself is very much enlarged, and upon its fundus, immediately beneath the peritoneum, is a tumour of a similar character, about the size of a marble. XXXII. 79

2992. Section of a very large Fibrous Tumour from a Uterus. One surface of the section is rough and shreddy, from sloughing; the others show the characteristic structure of the fibrous tumour, a greyish, dense, and tough basis traversed by circling and wavy shining white bands. XXXII. 26

Presented by Dr. Conquest.

Vide also Nos. 3289 and 3290, in Series L.

Degenerations of Fibroids—Softening.

2993. Section of a large Fibrous Tumour, removed after death from a Uterus, and exhibiting in its interior a cavity formed by softening of its substance. The cavity contained a serous fluid, and is bounded by the soft and rather flocculent tissue of the tumour. XXXII. 40

2994. A Uterus, in the posterior wall of which a large, nearly spherical mass is imbedded, and appears to be composed of a crowd of Fibrous Tumours closely connected. In the middle of the mass is a narrow space or fissure, the walls of which are formed by the tumours, and of which a part of the cavity is filled by a tumour projecting into it from the side. At the lower part of the mass a portion of the uterine wall is shown extended over its surface: its posterior surface is completely covered by peritoneum, beneath which some of its component tumours appear prominent. XXXII. 41

The patient was a delicate and unhealthy woman, 38 years old. Menorrhagia had existed for seven years, and had been excessive for the year before death.

Presented by Dr. Rigby.

Calcification.

2995. Section of a Uterus, elongated and distorted by the growth of ten or twelve Tumours, of various sizes, in its walls. Most of the tumours are seated just beneath the peritoneal covering of the fundus of the uterus. The largest of

them is divided, and exhibits a firm fibrous texture, surrounded by a complete capsule of bone-like substance. Another of the tumours is attached to the fundus of the uterus and to an adjacent tumour, by only a very narrow pedicle. The substance of the uterus itself appears healthy; its elongated cavity is laid open. XXXII. 4

2996. A Uterine Fibroid calcified *en coq*, and partially enucleated.—Described in *Transactions of the Obstetrical Society*, Edinburgh. Meeting, March 27, 1867.

Presented by Dr. Matthews Duncan.

2997. A large, lobed, Fibrous Tumour, which was spontaneously expelled from a uterus. Its texture was softened, and soaked with fluid, as if through partial decomposition; and on its surface are numerous thin plates of bone-like substance, which seem to have been nearly separated by decomposition. XXXII. 50

2998. Portions of Substance like very hard Bone, in coral-like masses, which were deposited in a fibroid of the uterus. XXXII. 25

2999. Plates of Bone-like Substance separated from the Tumour last described, and dried. They have not the microscopic structure of bone, but appear formed by calcification of the fibrous tissue. XXXII. 51

The patient was 46 years old. She had observed the tumour for twenty years, but had borne during that time many children. For eight years, after the birth of her last child, her health had been very delicate, and she had a constant discharge of blood by the vagina. For many weeks prior to the discharge of the tumour, which was expelled with pains like those of labour, flakes of bone passed away such as are still attached to its surface. Her recovery, after the expulsion of the tumour, was complete.

Presented by Mr. Covey.

3000. A small Calcified Tumour probably a sub-peritoneal uterine fibroid, which was loose in the sac of the peritoneum. XVI. 118

Vide Nos. 3222, 3223, 3292, 3293 in Series L.

FATTY TUMOUR IN A FIBROID.

3001. A pedunculated fibrous Tumour of the Uterus, with a small, well-defined, capsulated, fatty tumour imbedded in it near the centre of the mass. It was removed by operation from a woman aged 50. Its growth was not accompanied by any symptom, but it suddenly protruded from the vagina during an action of the bowels. XXXII. 74

A Drawing of the specimen is preserved, No. 513.

CANCER OF THE CERVIX UTERI.

3002. A Uterus, of which the cervix has been destroyed by ulceration. The ulceration has also destroyed a considerable part of the vagina and the adjacent portion of the wall of the bladder. The ovaries are uniformly solid and hard. XXXII. 14

3003. A Uterus, of which the lower half has been destroyed by ulceration, probably of cancerous nature. The adjacent part of the vagina is superficially ulcerated. XXXII. 23

Presented by Dr. Conquest.

3004. Part of a Vagina and the Uterus. The cavity of the uterus has been laid open to show an irregularly ulcerated surface caused by a deposit of medullary carcinoma upon its inner aspect, extending along the cervix, but ceasing before it reaches the os externum. The lining membrane of the vagina retains a natural appearance. XXXII. 57

3005. A fungating Epithelioma springing from the cervix uteri, which was excised.

Presented by Dr. Matthews Duncan.

3006. A mass of Epithelioma, together with the Os Uteri, and part of the cervix, removed by the écraseur. On the upper surface of the preparation, near its centre, is a smooth, cup-shaped depression. This is formed by the reflexion of peritoneum from the bladder to the uterus, which was removed at the time of the operation. XXXII. 70

From a married woman who had enjoyed good health until three months prior to the operation. Her catamenia ceased and were replaced by repeated and profuse hæmorrhages. There were also severe bearing-down pains, and a constant discharge of offensive mucus. The most careful examination of the growth was followed by severe bleeding. The operation became necessary on account of the extreme exhaustion which resulted from the discharges from the cancer.

The patient recovered from the operation, but died subsequently with a return of the disease.

Presented by Mr. John Nicholson.

3007. The Pelvic Organs of a woman, showing a cancerous ulceration, commencing probably in the cervix uteri, which has destroyed the greater portion of the cervix, the posterior wall of the bladder, and the upper portion of the vagina. The rectum is also involved in the morbid growth. XXXII. 70A

CANCER OF THE CERVIX AND BODY OF THE UTERUS.

3008. A Uterus, in which the lower two-thirds of the walls are enlarged by the infiltration of a soft medullary substance. The natural texture of the organ can hardly be discerned. The disease forms a large spheroidal mass, of which the lower surface, projecting into the vagina, is ulcerated and flocculent. XXXII. 15

3009. A Uterus and Vagina. The cervix uteri and the upper part of the vagina are deeply ulcerated; their remains are soft, broken, and flocculent, like the surface of a soft medullary tumour in which ulceration has taken place. XXXII. 19

Presented by Dr. Conquest.

CANCER OF THE BODY OF THE UTERUS.

3010. An enormous cancerous enlargement of the body of the Uterus; without change of shape.

The patient died of acute peritonitis.—Described in the *Transactions of the Obstetrical Society of London*, vol. xx, 1878.

Presented by Dr. Matthews Duncan.

3011. A Uterus, the cavity of which is dilated by a large, soft, broken, and shreddy Medullary Tumour. The tumour appears to have originated in the wall of the lower part of the uterus, and has extended from the anterior wall into the bladder; the space between the two organs, as well as a large portion of the cavity of the bladder, is filled by a similar substance. XXXII. 11

3012. A Uterus; its interior, laid open from the anterior aspect, is rough from the presence of a cancerous deposit, portions of which had been removed during life. The encroachment of this deposit upon the walls can be traced along the margin of the incision, being most conspicuous towards the fundus. Here, somewhat to the right side, the entire uterine wall, infiltrated with the morbid growth, has softened, and to some extent has been completely removed, leaving a large aperture by which the interior of the organ would have communicated with the sac of the peritoneum, but for the firm adhesions established around the margin of the opening. The patient sank under an attack of general peritonitis. XXXII. 59

3013. Uterus from a woman, aged 28, who died from fæcal abscess. The uterus is greatly enlarged and its mucous membrane much altered in character, having a papilliform almost warty appearance. The woman's illness commenced after a confinement between four or five months before death.

3014. Malignant Ulceration of the interior of the uterus, with tumours of the vaginal wall.

From a woman, 23 years of age. The vaginal wall contains growths of all sizes up to that of a walnut. The tumours are seated chiefly in the orifice and anterior wall of the vagina. The uterus, which is three or four times the natural size, is on its inner surface covered with black detritus, deeply ulcerated in places and sloughy. The tissue of the organ is pale and soft.

Both ovaries are highly cystic. There was no peri-uterine hæmatocele.

The patient had miliary tuberculosis of the lungs and pyæmia.—*Post Mortem Book*, vol. iii, Case 121. October 3, 1872.

3015. A Uterus, enveloped by a mass of Medullary Substance with a lobed surface, and with distinct tumours adjacent to it. Ulceration has occurred in the neck of the uterus and in the contiguous part of the vagina. XXXII. 18

Presented by Dr. Conquest.

SERIES XLIV.

DISEASES OF THE VAGINA AND EXTERNAL ORGANS OF GENERATION IN THE FEMALE.

HYPERTROPHY OF THE CLITORIS AND NYMPHÆ.

3016. A large mass of substance, very deeply lobed, which was removed from a clitoris. It probably had its origin in enlargement of the preputium clitoridis. XXXII. 37

3017. A Clitoris, enlarged into a mass nearly two inches in diameter, by the growth of firm, pale, and obscurely fibrous substance, with closely woven glistening bands. In the interior of the growth are several cavities or cysts of irregular forms, nearly filled with groups of small bodies attached by narrow pedicles to the internal surfaces of their walls. XXXII. 39

3018. An enormous wart-like growth from the Clitoris. It was removed by operation. XXXII. 85

3019. The Prepuce of a Clitoris, enlarged into a spheroidal mass between five and six inches in diameter. The mass appears composed of a compact and elastic fibro-cellular tissue. Its surface is lobed, fissured, coarsely warty, and brownish. It is suspended by the nymphæ, which are similarly, but slightly, enlarged. XXXII. 54

The patient was 26 years old. The growth was removed four months after her first labour.

Presented by Frederick Bell, Esq.

3020. A Nympha removed from a middle-aged woman. It is enlarged so as to form a deeply lobed spheroidal mass, with a wrinkled and warty surface, between three and four inches in diameter. A section of it shows that it is composed of a firm, compact, and elastic tissue, like skin infiltrated with serous fluid. XXXII. 36

3021. Elephantiasis of Nympha.

Excised in Brazil by Dr. Hall.

Presented by Dr. Matthews Duncan.

TUMOURS OF THE LABIA AND VAGINA.

PAPILLOMA.

3022. Two large warty growths, which were removed from the Labia Pudendi. XI. 19

FIBROUS AND FIBRO-CELLULAR TUMOURS.

3023. A lobulated fibro-cellular Tumour, covered by coarse hypertrophied skin, which was attached by a long narrow pedicle to the labium of a woman aged 22. It had been slowly growing for many years.

3024. A Pendulous Tumour, which was attached to a labium by a narrow pedicle. The surface is covered by a mass of pedunculated lobules and folds. The tumour is composed of firm fibro-cellular tissue, from which a large amount of serous fluid exuded on section.

The specimen was removed from a young woman aged 21. It had been growing six years. A microscopic section is preserved, No. 132.—See *Lucas Ward Book*, vol. vi, p. 345.

3025. A large Fibro-cellular Tumour, which was attached by a broad pedicle to the left labium of a woman, aged 35. It had existed for ten years. Three years previous to its removal the woman contracted syphilis, since which time it had rapidly enlarged. XXXII. 80

3026. Section of a Large Tumour, which formed within a labium pudendi. It consists throughout of a tough and compact substance, with closely interwoven fibres, like indurated cellular tissue. XXXV. 19

The tumour was removed from a lady, 28 years old. It had been observed four years; had given no pain, and interrupted no function, though it was twice as large as an adult's head. It commenced its growth at the lower part of the left labium, and extended gradually along the buttock, and over the os coccygis, forming a pendulous mass rather broader than the two thighs. In removing it, the anterior portion of the tumour was found to extend along the side of the vagina: it was cut off, and a portion was left behind, which again grew to a mass about one-third of the size of that which was removed. A second operation was therefore performed two years after the first; and the whole tumour being extirpated, the patient completely recovered. She remains well to this time, eighteen years after the second operation. The case is related by Sir W. Lawrence, Bart., in the *Medico-Chirurgical Transactions*, vol. xvii, p. 11, London, 1832.

3027. A Fibrous Tumour, removed from the wall of the vagina by the side of the clitoris, of a woman, 22 years old. XXXII. 86

3028. A Flask-shaped Fibro-cellular Tumour, pendulous from the right wall of the vagina and right nympha. XXXV. 71

The patient was 34 years old, and had noticed the disease for three or four years. It began as a tumour projecting into the vagina from beneath its external wall, and in this situation acquired a large size before it protruded externally. Its protrusion occurred ten days before its removal, and was followed by very quick enlargement, probably because of the inflammatory swelling. It was loosely connected with the surrounding tissues, and was easily removed. There was no return of the disease within two years and a half of the operation.

3029. A small Tumour, having in section a fibrous appearance, removed from the anterior wall of the vagina.

Histologically it is composed of fibrous tissue intermixed with a large proportion of organic muscular fibre.

Microscopic sections are preserved, No. 133.

3030. A large cluster of Polypoid Growths, removed from the nymphæ and walls of the vagina of a child. The largest growth is of oval shape, and nearly three inches in its chief diameter; the others are various in size and shape; some spheroidal, many pyriform, and the smallest not more than one or two lines in length. They are grouped without order; the largest is attached to the upper wall of the vagina and to the nymphæ, and at its upper part is traversed by the urethra; the others were attached to different parts of the vagina. In minute structure all appeared to be composed of very fine fibro-cellular connective tissue; the largest was soft, elastic, opaque-white; the others, more like gelatinous polypi of the nose, were nearly pellucid, succulent, pale-yellowish, purple-pink, and white in various shades. At birth, a growth, "like a bunch of small grapes," was observed projecting from the vulva. It appeared to be connected with the right wall of the vagina, and, when the child was six weeks old, was removed by ligature. It was, probably, soon reproduced, but the next growth was confined within the vagina, and did not protrude till the child was three years old. It was tied round what appeared to be its base, and sloughed

away. But a fresh growth quickly took place, and increased rapidly. The mass here shown was excised six months after the second operation. The whole of the disease, however, could not be cut away; some was left surrounding the urethra, and from this a rapid increase took place, and destroyed life by exhaustion in about three months. XXXII. 66

CANCER.

3031. Part of a Vagina. An irregular warty cancerous growth projects upon its surface, and was connected with a mass of similar disease, which, originating in the right kidney, made its way downward along the course of the ureter. XXXII. 60

The patient sank gradually from peritonitis and exhaustion.

3032. An Epithelioma involving the orifice of the vagina. XXXII. 61

3033. The Labia and part of the Vagina, removed by operation on account of a large mass of melanotic disease, which, arising at the front part of the vagina, encroaches equally upon either labium. XXXII. 62

3034. The Labia Pudendi, affected with cancer. They are both enlarged and indurated. In the left labium, which is the most diseased, the cancer forms an elevated, circumscribed, and superficially ulcerated swelling. XXXII. 32

They were removed from a middle-aged woman.

3035. A Labium, on the surface of which is an oval, elevated, warty growth, of moderately firm texture, and with a finely granulated surface, very similar to the chimney-sweepers' cancer of the scrotum. XXXII. 42

CYSTS.

3035a. A Cyst which was attached to the right labium by a slender pedicle.

URETHRAL TUMOUR.

3036. A soft spongy Tumour, which was removed by ligature from the margin of the orifice of a woman's urethra. XXXII. 28

SERIES XLV.

DISEASES OF THE OVUM AND ITS MEMBRANES.

MYXOMATOUS DISEASE OF THE CHORION (or so-called Hydatid Degeneration).

3037. Hydatid disease of the Chorion. The clusters of which it is composed verge towards a common origin at the central and upper portion of the group. The larger cysts are surrounded by others of a smaller size, either attached singly by a delicate pedicle or arranged in clusters upon their surface. A single pedicle by its numerous branches serves in many instances for the support of several vesicles. XXXIII. 20

3038. A similar specimen; with which there is also connected a thick mass of firm substance, like a decidua or placenta infiltrated with blood. XXXIII. 12

3039. A similar specimen; a large mass formed by clusters of small pellucid cysts or vesicles singly attached to very slender branching cords. At the upper part of the specimen are portions of thin membrane, like an amnion, by which the several clusters of cysts were connected. XXXIII. 11

Presented by Dr. Conquest.

3040. A similar specimen.

Presented by Dr. Matthews Duncan.

3041. Hydatid disease of the Chorion with cyst-like formations. The cord is present. The embryo has disappeared.

Presented by Dr. Matthews Duncan.

3042. A similar specimen.

3043. An Ovum, in which a short small umbilical cord is shown, but in which no embryo could be found. There is hydatid disease of the chorion. XXXIII. 2

Presented by Dr. Conquest.

DISEASES OF THE PLACENTA.

3044. A Placenta, which was separated from the uterus in an abortion about the middle period of gestation. Its substance is unnaturally firm, and its fœtal surface is deeply and irregularly lobulated. XXXIII. 9

3045. An Ovum, which was expelled in an abortion. The decidua and chorion together form a tough, thin, coarsely-granulated layer. In the place of the placenta there appear only two distinct round masses, apparently of some firm substance, which project into the cavity of the amnion. The amnion forms a thin but dense and opaque layer of membrane lining these projections and the

whole inner surface of the ovum. The umbilical cord is small and attached to one of the projections. The embryo is nearly two inches long, and well formed; but all its parts appear united, as if by thickening of its amnionic covering, or as if a layer of false membrane had been thinly deposited and organised on its surface, so as to envelope it with a nearly smooth covering. XXXIII. 3

3046. An Ovum, which was expelled at an early period of gestation. The fœtus, about three-quarters of an inch in length and well formed, is suspended by its umbilical cord, which appears to have been unnaturally infiltrated. The placenta is large and firm, and its inner surface is deeply lobed and nodulated: a section shows a similar lobulated arrangement within it. XXXIII. 1

3047. A thick layer of Membrane which was discharged spontaneously from the inner surface of a uterus. XXXII. 29

The patient was a woman, 30 years old. She supposed herself pregnant, but no distinct parts of an ovum could be discovered in the substance discharged.

Presented by Prothero Smith, Esq.

3048. A Placenta, which is unusually large, with the membranes. It was discharged six weeks from the period of menstruation. The fœtus has been destroyed.

DETACHMENT OF THE PLACENTA.

3049. A Fœtus and its Placenta, at the seventh month of gestation. Profuse hæmorrhage occurred two weeks before delivery. The presentation was natural, and delivery was easily effected. The placenta was quite healthy, and wholly attached to the uterus, but the membranes were partially separated from the body of the placenta. To this the hæmorrhage was due. The woman recovered slowly, and suffered from phlegmasia dolens. A subsequent pregnancy was followed by a second attack of phlegmasia dolens.

RETAINED PLACENTA.

3050. A Placenta, which was retained, and expelled sixteen weeks after the fœtus. During a part of this time the woman went about, following her ordinary occupation. The usual discharge ceased for some days, but hæmorrhage subsequently occurred.

ABORTION.

3051. A diseased Ovum, at the seventh or eighth week of utero-gestation, showing the early formation of a mole. The decidua is distinctly seen on the outer surface, and the amnion on the inner surface, of the mass. The thickness of the mass, which is in several parts nearly half an inch, is probably due to the extravasation of blood among the radicles of the chorion, as shown by the section of the lower part of the preparation. XXXIII. 6

Presented by Dr. Rigby.

3052. A diseased Ovum, at the ninth or tenth week of utero-gestation. The decidua is reflected, but in other respects this ovum presents nearly the condition shown in the preceding preparation. The quantity of extravasated blood, however, is larger, and the mass has in consequence a distinctly lobulated form. XXXIII. 7

3053. Portion of a diseased Ovum, with the Umbilical Vesicle. XXXIII. 4

It was expelled from a patient who thought herself in the sixth month of her pregnancy, but in whom no enlargement of the uterus had taken place for several weeks before the abortion. In twenty-four hours after the expulsion of this ovum, a dead fœtus, of about four months, with its membranes complete, was expelled; showing that the parts preserved must have belonged to another fœtus which had died at a much earlier period.

Presented by Dr. Rigby.

3054. Specimen showing the Hypertrophied Decidua Vera, with an Ovum like a flattened boy's marble attached to the fundus, and concealed by the decidua reflexa, which covers it. The case is described in Dr. Matthews Duncan's "Researches in Obstetrics."

Presented by Dr. Matthews Duncan.

3055. Specimen showing an Ovum enveloped in decidua reflexa, and attached to the vera almost in a polypoid manner.

Presented by Dr. Matthews Duncan.

3056. An Ovum, at an early stage expelled with the decidua reflexa and part of the vera. The decidua reflexa is thickened.

Presented by Dr. Godson.

3057. An Ovum, which was expelled in an abortion between the third and fourth months of gestation. As in the preceding specimen the placenta is very firm, and its fœtal surface is deeply lobed and knotted. The fœtus, about three inches long, is well formed. A bristle is passed behind the umbilical vesicle and the omphalo-mesenteric duct. Just above the duct a small body, supposed to be another fœtus blighted, is attached to the membranes.

XXXIII. 10

3058. A Fœtus and its membranes. They were expelled without the placenta six weeks from the last menstrual period.

DISEASES OF THE MEMBRANES.

3059. A mature Fœtus. The upper and lower limbs are much distorted and are drawn over the back of the fœtus. The right hand has only three fingers, and is connected with the left foot by a membranous band. The toes of the right foot are imperfect. Amnionic bands are seen passing in various directions.

Presented by Dr. Matthews Duncan.

DISEASES AND DISPLACEMENTS OF THE UMBILICAL CORD.

3060. Parts of a double Placenta, and of two Umbilical Cords which arise therefrom. One of the cords is twisted into a single noose, inclosing, and strangulating thereby, its fellow, which was flaccid and flat when expelled. The second child was born dead two hours after the first, the noose having been pulled tight by a nurse who was attending the patient, and who was ignorant of the existence of the second cord. XXXIII. 21

Presented by Mr. Newman.

3061. Twins at about the seventh week, with the Placenta, showing atrophy of the cords, velamentous insertion, and the degeneration of the placenta, with bulbs on the fœtal aspect, which takes place in missed abortion.

Presented by Dr. Matthews Duncan.

3062. A portion of Cord and Umbilicus. About one inch of the cord at the umbilical insertion is contracted to a firm thread not larger than a piece of whip-cord. The contraction is sudden, and the remainder of the cord is of normal size and appearance. The vessels were filled by soft clot.

Taken from a fœtus born dead at the seventh month.

SERIES XLVI.

DISEASES AND INJURIES INCIDENTAL TO GESTATION AND PARTURITION.

MISSED ABORTION.

3063. A Fœtus papyraceus. One of twins.

Presented by Dr. Matthews Duncan.

3064. Compressed secondary Fœtus. One of twins.

Presented by Dr. Matthews Duncan.

3065. A compressed Fœtus at the fifth month. One of twins.

Presented by Dr. Matthews Duncan.

3066. Specimen, showing a Fœtus at the seventh week, rolled up within the placenta in utero. The cord is atrophied.

A case of missed abortion.

Presented by Dr. Matthews Duncan.

3067. The Uterus of a sheep, containing a retained Fœtus, decomposed, dried up, and shrivelling.

The ewe, when killed, was stated to be in good condition. She had not brought forth the preceding season, six months before, and it was supposed that she had warped her lamb.

Presented by Mr. Warner.

3068. One of the Lower Limbs of a Fœtus of mature growth, which was contained in an osseous cyst, and remained in the abdomen of the mother for fifty-two years. A portion of the cyst is connected with the limb; their surfaces were perfectly adherent, but have been partially separated. The several tissues of the limb are dry and compressed, but are of healthy structure. XXXIII. 8

The patient was 80 years old when she died. Fifty-two years before, she had signs of pregnancy, and then of labour for the delivery of this child; but the latter passed off at the end of a week. She continued very weak for three months; but from that time till she was affected with gangrena senilis, she had good health. The case is described by Dr. Cheston in the *Medico-Chirurgical Transactions*, vol. v, p. 104. London, 1814. Other portions of the same fœtus are in the Museum of the Royal College of Surgeons of England.

3069. Lithopædion Calf. From the Earl of Southesk's "Esmeralda." She was served July 7, 1865; had rinderpest in December of same year. Being supposed to have become sterile, she was fattened, and this process led to slow expulsion of the calf, which was completed on October 18th, 1867, without anything like labour.

Presented by Dr. Matthews Duncan.

EXTRA-UTERINE FŒTATION.

3070. A Uterus, with the Ovaries and Fallopian tubes. The middle of the

left Fallopian tube is dilated by an ovum. The dilatation is laid open, and the chorion and other parts of the ovum are shown. The uterus is slightly enlarged, and its cavity is lined by a substance like decidua. There is a simple cyst in the right ovary. XXXIII. 13

Rupture of the dilated portion of the Fallopian tube took place in the seventh week of gestation, and the patient died of hæmorrhage.

3071. A similar specimen, in which, as in the preceding case, death was the result of hæmorrhage from the ruptured Fallopian tube in the seventh week of gestation. The middle of the right Fallopian tube is dilated into a sac, which contains the fœtus and its membranes. In one side of this sac is a small lacerated opening, through which the flocculent chorion protrudes. From this opening a gallon of blood was discharged into the cavity of the abdomen. On its other side, a large portion of the sac has been removed to display the fœtus and membranes. The outermost membrane enclosing the fœtus has all the characters of decidua. Besides this membrane, the amnion and chorion are distinct. The fœtus and umbilical cord are also perfect. The right ovary contains a large corpus luteum, distinguishable by its circular form and yellowish colour. A bristle is passed through the aperture in the ovary from which the ovum escaped. There is also a large cyst in this ovary which contained a watery fluid. The cavity of the uterus is lined throughout by a perfect and thick decidua. Bristles are passed through it into the uterus. A bristle is also passed through the Fallopian tube into the dilated portion of it, which contains the fœtus and its membranes. XXXIII. 14

A Drawing of the specimen is preserved, No. 519.

3072. Portion of the broad ligament of a Uterus, with the Fallopian tube and ovary. In the middle of its course the Fallopian tube is distended by the development of an embryo within it. On the surface of this part there is a small irregular aperture, through which fatal hæmorrhage into the abdomen took place. The ovary is large; at its lower part is a very large corpus luteum with a central cavity. XXXIII. 15

The patient, in the seventh week of her tenth pregnancy, was suddenly seized with pain in the situation of the Fallopian tube, and signs of internal hæmorrhage, and died in ten hours.

Presented by Dr. Conquest.

3073. A Uterus, with the Fallopian tubes and ovaries. A fœtus has been developed in the right Fallopian tube close to the uterus, and has attained a length of between three and four inches. The placenta and the several membranes of the ovum are well formed. The uterus is covered by coagulated blood, effused probably from the ruptured Fallopian tube. XXXIII. 16

3074. A similar specimen, in which the fœtus, contained in the left Fallopian tube, is yet further developed, and measures between five and six inches in length. Both it and its membranes are well formed. XXXIII. 17

3075. Extra-uterine Fœtation, apparently interstitial. Sudden death occurred from rupture of the cyst.

3076. The Cyst of an extra-uterine Fœtus, distended with hair; the uterus is greatly enlarged.

Sent by Dr. King, of Barbadoes, to Dr. Campbell, who described it in his book on extra-uterine fœtation.

Presented by Dr. Matthews Duncan.

3077. The Uterus and its appendages of a woman, aged 39 years, pregnant for the fourth time, in whom an intra- and extra-uterine fœtation (tubal) progressed to the full period of gestation. Beyond unusual distension of the

abdomen there was no abnormal symptom during pregnancy. The extra-uterine fœtus was pressed into the cavity of the pelvis during labour, and had to be raised in order to admit of delivery by turning of the intra-uterine fœtus, which presented by the head. The patient died from exhaustion forty-five hours after delivery. The case is fully reported in the *Medical Times and Gazette*, July 18, 1863.

FŒTATION IN AN UNDEVELOPED UTERINE HORN.

3078. From a case in which death occurred in the third month of gestation. The uterus is bi-cornis; the left horn which contained the fœtus, is dilated into a sac. On one side of this sac is a lacerated opening, through which the fœtus escaped into the cavity of the abdomen, and to the edges of which the membranes of the fœtus remain attached. The left ovary contains a corpus luteum. The cavity of the right uterine horn is lined by decidua. XXXIII. 18

Presented by Dr. Bull.

CANCEROUS AND OTHER TUMOURS COMPLICATING PREGNANCY.

3079. A Uterus and Vagina laid open from behind, from a woman, aged 40, who had previously borne ten or twelve children. A large oval tumour is attached by a broad pedicle to the anterior lip of the uterus. The tumour was tolerably firm upon the surface, but towards the centre it was much softer—nearly semi-fluid. In structure it is composed throughout of cells having all the characters of those of cancer. The immediate cause of death was hæmorrhage, which had occurred at intervals for three or four months previously. In the uterus is a fœtus four or five months old.

3080. A multilocular Ovarian Cyst from a woman, aged 39. During the fifth month of her pregnancy it burst spontaneously into the peritoneal cavity, causing intense pain, incessant vomiting, and hiccup. She died ten days after, apparently from collapse rather than peritonitis; scarcely a trace of inflammation was discovered after death. A healthy fœtus was removed from the uterus. The woman had previously borne six children. XXXI. 29

Presented by Mr. Nicholson.

MORBID PARTURITION.

LACERATION OF THE CERVIX UTERI.

3081. A Uterus, the neck of which was torn through two-thirds of its circumference, during parturition. XXXII. 47

The child, in this case, was born with hydrocephalus. Its skeleton is in the Museum. Death ensued shortly after the rupture of the uterus.

Presented by Dr. Conquest.

LACERATION OF THE VAGINA.

3082. A semi-circular laceration is seen passing across the posterior surface of the Vagina, near the cervix uteri.

Case of Dr. Jamieson brought before the Obstetrical Society of Edinburgh, 1872.

Presented by Dr. Matthews Duncan.

3083. A Uterus and Vagina. During parturition, the vagina was torn through half its circumference close to the part connected with the uterus. The body of the uterus presents many peritoneal sulci. XXXII. 46

Presented by Dr. Conquest.

3084. A Uterus and Vagina, with a portion of the Rectum. Six weeks before death the upper part of the vagina was torn during parturition. A long curved rent through the posterior wall of the vagina and a portion of the neck

of the uterus still exists, and exhibits no appearance of granulations. Other smaller lacerations of the mucous membrane of the vagina are seen on its sides. A band of lymph extends from the vagina to the rectum. XXXII. 45

The patient was a woman, 25 years old. In two previous labours she had been delivered with the help of instruments. The laceration here shown occurred twenty-eight hours from the commencement of her third labour. She was again delivered with the help of instruments. Peritonitis followed, from which she gradually sank. The case is described by Mr. Birch, in the *Medico-Chirurgical Transactions*, vol. xiii, p. 357. London, 1827.

3085. An Ovarian Cyst, which had protruded through the external parts by rupture of the vagina during labour, and was afterwards removed by ligature, with success. XXXI. 34

This case is related by Mr. Brewer in the *Obstetrical Society's Transactions*, vol. xx, p. 184.

LACERATION OF THE PERINEUM.

3086. Specimen showing a laceration of the Perineum nearly to the anal margin.

Presented by Dr. Matthews Duncan.

SLOUGHING OF VAGINA.

3087. A Vagina and Rectum, with the external organs of generation. The whole circumference of the uterine extremity of the vagina is soft and flocculent, having sloughed in consequence of the long-continued compression, between the head of the child and the brim of the pelvis, to which it was subjected during a tedious parturition. XXXII. 43

Presented by Dr. Conquest.

VESICO-VAGINAL FISTULA.

3088. A Uterus, with the upper part of the Vagina, and the urinary bladder. In consequence of injury received in parturition, a large oval communication exists between the vagina and the neck of the bladder. The margins of the opening in the bladder are close to the orifices of the ureters, through which bristles are passed. The os uteri is obliterated. XXXII. 44

3089. A Large Vesico-vaginal Fistula.

Presented by Dr. Matthews Duncan.

TUMOURS OBSTRUCTING OR COMPLICATING DELIVERY.

3090. A large fibrous Tumour of the Uterus, removed from the body of a woman, aged 38. It obstructed delivery at the eighth month, which was ultimately effected by turning. Abdominal inflammation supervened, which proved fatal. XXXII. 72

3091. A Uterus, with the ovaries and their ligaments. Springing from the os and cervix uteri, there is a large excavated irregularly ulcerated mass of epithelioma. In the front wall of the uterus is a vertical depressed scar.

From a woman, aged 27, who during her fourth pregnancy was admitted into the Hospital with extensive epithelial cancer of the cervix uteri. At the end of the eighth month of her pregnancy Cæsarian section was performed. The operation wound quickly healed, and her general health improved, as did also the local disease. Subsequently the disease assumed rapid progress, and she died of exhaustion eighteen months after the operation.—See *Medical Times and Gazette*, April 6, 1866, p. 362.

INVERSION OF THE UTERUS.

3092. A Uterus, which was removed by the écraseur, from a woman, 28 years of age, on account of inversion of three years' duration. The inversion was said to have been produced in the removal of the placenta two days after delivery.—See *Martha Ward Book*, June, 1873.

Vide Nos. 2949 to 2951 in Series XLIII.

RETAINED AND ADHERENT PLACENTA.

3093. Section of a Uterus after parturition, showing the placenta adherent at the lower part.

Presented by Dr. Matthews Duncan.

3094. The Uterus and Ovaries of a woman, 25 years old, who miscarried at about the tenth week of pregnancy, and died ten days afterwards from pyæmia. The right ovarian vein was distended by an old clot. The uterus is laid open, and shows an adherent placenta. In the right ovary a corpus luteum is seen.

3095. A Uterus laid open from its anterior aspect. Attached to its posterior and inner wall, somewhat above its middle and to the right, is an oval tumour resembling the placenta in structure, part of which it is believed to have been; it is firmly connected by its base with the subjacent structures. XXXII. 63

From a woman who died after a miscarriage at the fifth month from profuse hæmorrhage after removal, as was supposed, of the entire placenta.

CÆSARIAN SECTION.

3096. A Uterus, from an incision, in the anterior wall of which the placenta protrudes. Cæsarian section was performed immediately after death from enteritis, very near the full time of pregnancy. The preparation shows that the uterus contracted after death.

Presented by Dr. Matthews Duncan.

3097. The Uterus of a woman, upon whom the Cæsarian operation was performed.

The Pelvis is No. 290 in Series I.

3098. The Uterus of a woman, aged 33 years, on whom the Cæsarian operation was performed in the seventh month of her pregnancy. She died fourteen hours afterwards. A large medullary tumour which sprang from the right ovary occupied the lower portion of the pelvis, and prevented delivery by the natural passage. XXXIII. 43

3099. The Uterus of a woman, aged 32, on whom the Cæsarian operation was performed. XXXIII. 44

The pelvis of the patient is No. 291, Series I.—See *Martha Ward Book*, vol. iii, p. 153.

Vide also No. 3091.

MISCELLANEOUS.

3100. Uterus of a woman, who died after delivery, which took place while she was suffering from acute peritonitis. The surface of the uterus shows sulci.

The case is described in Dr. Matthews Duncan's "Mechanism of Natural and Morbid Parturition."

Presented by Dr. Matthews Duncan.

3101. The Uterus, laid open, of a young woman, aged 19 years, who died of typhoid fever on the thirtieth day. She had miscarried five days before death in the fifth month of her pregnancy. The interior of the uterus is occupied by a large clot of blood. A corpus luteum was found in the right ovary.

3102a. Sequestrum, which separated from the parietal bone.

The necrosis was due to the use of the forceps.

Presented by Dr. Matthews Duncan.

SERIES XLVII.

DEFORMITIES AND TUMOURS OF THE PELVIS.

3103. A flat Pelvis, contracted only in a slight degree in the conjugate diameter.—*Vide* No. 278 in Series I, and No. 1126 in Series V.

Presented by Dr. Matthews Duncan.

3104. Generally uniformly contracted Pelvis, having the appearance of a male pelvis. From a bulky woman, who had neither uterus nor vagina.

The pelvic viscera are preserved in the Series of Malformations, &c.

Presented by Dr. Matthews Duncan.

3105. A generally uniformly contracted Pelvis.

From a woman, aged 25 years, who had been married five years; she had borne four children; the first two were born at full time, dead; in the third labour craniotomy was performed. In the fourth pregnancy, premature labour was brought on at seven and a-half months. It was a shoulder presentation and turning was employed. There was also partial placenta prævia. The operation was followed by repeated rigors and pyrexia, and she died three weeks afterwards. On post mortem examination an abscess was found connected with the left ovary, and another behind the cervix uteri. There was no general peritonitis.—See *Martha Ward Book*, vol. ii, pp. 17 and 41.

3106. A generally uniformly contracted Pelvis from a primipara, aged 20 years, who died after craniotomy performed in the third day of labour. Her height was five feet. The measurements of the pelvis are as follows:—Conjugate three inches, transverse four and five-eighths inches, oblique four inches.

3107. Generally uniformly contracted Pelvis. (Pelvis equabiliter justo minor.)

See Dr. Martin, *Beiträge zur Gynækologie*, 1 heft. Jena, 1848, s. 142.

Presented by Dr. Matthews Duncan.

3108. Generally uniformly contracted female Pelvis.

Presented by Dr. Matthews Duncan.

3109. A similar specimen.

Presented by Dr. Matthews Duncan.

3110. Pelvis generally uniformly contracted; very small.

Presented by Dr. Matthews Duncan.

3111. Pelvis generally contracted and flat, that is, having contraction of the conjugate diameter.

Presented by Dr. Matthews Duncan.

Vide also Nos. 274 and 3134.

3112—3115. A series of four specimens of female Pelves deformed in consequence

of mollities ossium. They all show the peculiarly beaked form of the symphysis pubis, and the extreme concavity of the ilia.

3116. A Pelvis deformed in consequence of mollites ossium.

Presented by Dr. Matthews Duncan.

3117. A Pelvis similarly deformed.

From the collection of Dr. Martin, at Munich.
Presented by Dr. Matthews Duncan.
Vide also Nos. 290, 291, 292, in Series I, and 1117 in Series V.

3118. A Rickety Pelvis, remarkably narrow (one inch in conjugate).

Dr. Hunold, of Cassel, performed Cæsarian section on the woman, on August 26, 1800. The child, a boy, lived ; the mother died on the third day.—See *Osiander's Entbindungskunst.* 1 theil, 1819, s. 99. Also his *Comment. de instrum. et machinis.* 1810. Tab. III, fig. 2. See also *Eduard von Siebold's Lehrbuch der Geburtshulfe.* II Auflage, 1854, Seite 25.

3119. Cast of a Rickety Pelvis.

Presented by Dr. Matthews Duncan.

3120. Cast of a female Pelvis, with the deformity characteristic of rickets.

3121. A small female Pelvis, probably rickety.

Presented by Dr. Matthews Duncan.

For other Specimens of Rickety Pelvis, vide Nos. 272 to 280 *in Series I, and* 1126 *in Series V.*

3122. A Kyphotic Pelvis (?) The conjugate is enlarged and the corresponding diameter of the outlet is contracted. The deformity resulted from posterior angular curvature of the lumbar spine occurring during childhood.

Presented by Dr. Matthews Duncan.

For other specimens, vide Nos. 1112, 1113, *and* 1122, *in Series V.*

3123. A Funnel-shaped Pelvis ; the outlet being small.

From D'Outrepont's collection in Würzburg.
Presented by Dr. Matthews Duncan.
Vide also No. 3138.

3124. A transversely contracted Pelvis of Robert.

From the collection of D'Outrepont, in Würzburg.
Described by Robert in Marburg. See his work, Carlsruhe und Freiburg, 1842.
Presented by Dr. Matthews Duncan.

3125. A model of the oblique Pelvis of Nægele, with detached part of left thigh bone.

The person had severe periostitis of the thigh in the tenth year of life ; she died of fever in her first child-bed.
Case recorded by Dr. Rosshirt, of Erlangen.
Presented by Dr. Matthews Duncan.

3126. An oblique Pelvis of Nægele.

Presented by Dr. Matthews Duncan.

3127. Fragment of a characteristic oblique Pelvis of Nægele. The right sacro-iliac joint is absent.

Presented by Dr. Matthews Duncan.

3128. An oblique and generally contracted Pelvis. The right side of the pelvis is ill-developed, but the sacro-iliac joint is present.

Presented by Dr. Matthews Duncan.

3129. Slightly oblique Pelvis.

Presented by Dr. Matthews Duncan.
Vide also Nos. 275 and 280 in Series I, and No. 1114 in Series V.

The following pelves, showing slight obliquity, produced by lateral curvature of the spine, are called scoliotic.—*See* Nos. 272 and 273 in Series I, and Nos. 1115, 1116, and 1119 in Series V.

N.B.—There is no kypho-scoliotic pelvis in the collection.

3130. Spondylolisthesis. In this deformity the lowest lumbar vertebra is dislocated forwards on the sacrum, and encroaches on the brim.

From a case described by Kwisch, &c., in Scanzoni's *Beiträge zür Geburtshülfe.* Band iii, 1857.

Presented by Dr. Matthews Duncan.

N.B.—There is no specimen of spondylolizema in the collection. In it the deformity resembles spondylolisthesis, but arises from collapse of the vertebral column caused by the disappearance of the body of a vertebra.

3131. A female Pelvis. The left os innominatum is much smaller, thinner, and lighter than the right, apparently in consequence of impaired usefulness of the left leg. The pelvis is slightly oblique, and the outlet somewhat contracted. The left common iliac artery and its branches are much smaller than those on the right side. The head of the left femur lies in the acetabulum; its external surface is smooth and expanded from attrition against the upper end of the shaft. Probably separation of the upper epiphysis took place at an early period of life.

3132a. A Pelvis, with anchylosed right Hip-Joint.

From a person, 28 years of age, who died of disease of the brain.—See *Prager, Med. Vierteljahrschrift,* 1849, S. 104–110. Professor Dittrich.

Presented by Dr. Matthews Duncan.

Vide also No. 1125 in Series V.

3133. A Pelvis, with atrophy of one side.

See *Prager, Med. Vierteljahrschrift.* Professor Dr. Dittrich, *über Becken-misstaltungen,* 1849, s. 104–110.

Presented by Dr. Matthews Duncan.

3134. A Pelvis, with an Exostosis projecting from the promontory of the sacrum. The pelvis is generally contracted.

The woman died, undelivered, near Edinburgh. The uterus was ruptured. The body of the child had been separated from the head, which was found in the pelvis after death.

Presented by Dr. Matthews Duncan.

3135. A Pelvis, with a large Exostosis springing from the anterior surface of the sacrum, and nearly filling the cavity.

See Busch and Moser's *Monatszeitschrift fur Geburtshülfe,* 1854, Band x, Heft 1, s. 12.

Presented by Dr. Matthews Duncan.

3136. A male Pelvis, with a Bony Growth projecting from the last lumbar vertebra.

Presented by Dr. Matthews Duncan.

3137. A Pelvis, with an Exostosis on right venter ilii.

Presented by Dr. Matthews Duncan.

3138. A Pelvis, with an Osseous Growth around the right acetabulum. The outlet is contracted.

Presented by Dr. Matthews Duncan.

3139. Pelvis, of which the greater part was occupied by a large Tumour. The woman was delivered by embryotomy on several previous occasions. On the last occasion, the uterus ruptured during the operation, and she died.

Presented by Dr. Sheckleton, by whom the case is described in the *Dublin Quarterly Journal of Medical Science.*

3140. A Pelvis, with a large mass of Medullary Cancer springing from the pubes and smaller masses from the sacrum and left ilium.

See *Illustrated Med. Zeitung*, iii, and Schmidt's *Jahrbuch*, 1855, No. 8.
From the collection of Dr. Martin, of Berlin.

Presented by Dr. Matthews Duncan.

3141. Models of Pelves of twins of either sex, simultaneously born in the eighth month, and simultaneously dying after some days. They show the sexual differences already.

From D'Outrepont's collection in Würzburg.
Presented by Dr. Matthews Duncan.

SERIES XLVIII.

DISEASES OF THE MAMMARY GLAND.

SIMPLE CYSTS.

3142. Portion of a Mammary Gland, in which is imbedded a simple thin-walled cyst, with a smooth and polished internal surface. The cyst was filled with a clear fluid. XXXIV. 3

3143. A Cyst (galactocele) removed from a breast in which it lay deep within or behind the mammary gland. It was of nearly spherical shape, thin-walled, and loosely connected with the adjacent parts; its inner surface, now everted, is nearly smooth, polished, and of a pale brown colour. Some small portions of a white, fatty substance, like spermaceti, adhere to it. XXXIV. 31

3144. The quarter part of the contents of the Cyst last described; viz., about three ounces of a creamy, pale fawn-coloured liquid, with small white particles floating in it. It resembles the fluid contents of certain sebaceous cysts. XXXIV. 32

3145. A Cyst, the contents of which resembled inspissated milk (galactocele). It was removed from the mammary gland of a young woman, where it had existed for eighteen months without any material augmentation of its size. XXXIV. 33

3146. A portion of a Breast, removed by operation, showing a smooth-walled cyst of the size of a hazel-nut, which contained a serous fluid. The gland tissue in which the cyst lies is tough and fibrous, but otherwise appears normal.

Microscopic Examination.—The cyst was immediately surrounded by fibrous tissue containing at intervals slit-like and tri-radiate cavities lined with epithelium (ill-developed gland-tissue).

The parts were removed from a lady, aged 39 years; she had noticed a lump in the breast for nine months. No fluctuation could be detected over the cyst.

Presented by G. W. Callender, Esq.

PROLIFEROUS CYSTS.

3147. A Proliferous Cyst of the Mammary Gland. The cyst was as large as a small orange, and contained a yellowish-brown fluid; part of its outer surface was adherent to the under surface of the mammary gland, the other part to the skin in the neighbourhood of the nipple. The wall of the cyst is tough and fibrous, its inner surface is stained of a yellowish-brown colour; at one point a small compressed orifice is seen like that of a dilated duct. That part of the wall which was adherent to the skin is thinned and dilated into a pouch, from the inner surface of which a papillated growth sprouts: on the outer surface, which was adherent to the skin, two small secondary cysts, nearly as large as

hazel-nuts, are seen, also a small mass formed of an agglomeration of minute cysts. The mammary gland is extremely atrophied, and the gland tissue, which is tough and fibrous, is spread out in a thin layer beneath the skin. The nipple is retracted.

Microscopic Examination.—The proliferations are composed of an imitation of gland tissue consisting of tubules, and cylinders irregularly arranged and lined with indistinct columnar epithelium. The gland tissue of the breast consists of atrophied and compressed acini imbedded in a large amount of fibrous tissue.

From a woman, aged 46 years. The breast had been enlarging for three years, without pain. The cyst occupied the outer side of the breast. After the birth of her last child she had abscesses in this breast, which left an induration. Five or six years later a sero-sanguineous discharge took place from the nipple and has since appeared at every catamenial period.—See *Sitwell Ward Book*, vol. vi, p. 34.

Microscopic section, No. 134.

3148. Part of a Breast, in which a cyst, with rather thick tough walls, is imbedded in the mammary gland. A rough lobulated mass of soft substance has grown from a portion of the inner wall of the cyst: the rest of its cavity was filled with serous fluid. XXXIV. 7

The proliferations resemble microscopically those in the preceding specimen.—*See* microscopic section, No. 135, and a drawing, A. 45.

3149. A Breast removed from a middle-aged woman. The situation of the mammary gland is occupied by a large cyst, which contained a serous fluid, and around which the gland is spread out. The walls of the cyst are about a line in thickness, tough, but pliant: its interior is irregularly wrinkled, and somewhat sacculated; a small soft lobulated growth projects from a portion of its wall into its cavity. Above this cyst (at the part of the mammary gland which, during life, lay near the axilla) is a small oval mass of firm new growth, with irregular cavities, the result, apparently, of its partial softening. XXXIV. 16

Under the microscope the proliferous growth consists of areolar tissue containing alveoli filled with cells of the epithelial type.—Microscopic sections, No. 136, were preserved.

The patient died, some time after the removal of the breast, with a return of the disease.

3150. A Breast, with two cysts imbedded in the mammary gland. The walls of the cysts are thin and tough; their inner surfaces are coarsely wrinkled; and they communicate by a small aperture. The interior of the smaller cyst is rust-coloured. The larger cyst was distended by a watery fluid, and a lobulated growth of soft substance has arisen from a part of its inner wall. XXXIV. 1

The proliferous growth resembles microscopically that in the preceding specimen.

3151. A Breast, in which a Cyst is imbedded in the mammary gland. The cyst has the same general characters as those in Nos. 3142, 3149, and 3150, but its cavity is almost filled by a soft, lobulated, and vascular growth attached by a broad base to a large portion of its wall. It is loosely connected with the adjacent parts. The mammary gland is very small. XXXIV. 21

Microscopically the intra-cystic growth closely resembles Nos. 3147 and 3148. Microscopic sections are preserved, No. 137. A drawing of the tumour is preserved, No. 521.

The breast was removed from a woman, 49 years old. The cyst had been increasing slowly and with very little pain for between four and five years. She recovered from the operation.

SERO-CYSTIC DISEASE.

3152. Part of a Mammary Tumour containing numerous cysts, many of which are filled with solid growths. XXXIV. 34

3153. A portion of a Sero-cystic Tumour of the Breast. On the surface of the section a large cyst is seen almost filled up by an intra-cystic growth.

A section of a portion of one of the intra-cystic growths showed that it consists entirely of fibrous tissue.—*See* microscopic sections, No. 138.

The disease occurred in a woman, aged 66 years, and had existed for twelve years, during the the last six months of which it had rapidly increased from the size of a fist to that of a child's head.

3154. A Mammary Gland, with two tumours imbedded in it, which were removed by operation. Each tumour is circumscribed and surrounded by a distinct capsule of cellular tissue. The substance of each tumour appears to consist of separate portions loosely connected by cellular tissue, which in the recent state resembled the lobules of the pancreas. The arrangement of the lobules indicates that they are growths (such as are in Nos. 3148 and 3150) which have arisen from the walls of numerous cysts, and have now filled their cavities, become firm, and coalesced with the cyst-walls so as to form a nearly solid mass. XXXIV. 11

3155. Section of a woman's Breast, and of a Tumour seven pounds in weight, of which a part protruded through the ulcerated skin. The lower part of the tumour presents a section of a large cyst, with thick soft succulent walls, which contained a pale yellowish fluid. Above this, the substance of the tumour is soft, elastic, somewhat glistening and jelly-like: the greater part of it protruded through the skin in the form of a deeply lobed and very vascular mass, the surface of which was covered by healthy-looking granulations, and appeared to be in parts skinned over. The appearance of the tumour had been altered by a ligature tied round the base of the protruded part some time before it was removed; it is from this cause that the margins of the protrusion appear to overhang so far the surface of the surrounding integuments. XXXIV. 19

The tumour is a mixed round and spindle-cell sarcoma. A drawing of the tumour is preserved, No. 522.

3156. Section of a Tumour, with part of the integuments, removed from the same patient as the specimen last described. The characters of the tumour are very like those of the more solid portions of the preceding, pale yellowish, soft, glistening, and almost gelatinous. XXXIV. 20

The patient, at the time of the second operation, was 37 years old. The tumour first removed had been growing, with very little pain, for thirteen years, and did not interfere with lactation. When, at length, it grew very large, the skin over it became livid and pointed. It was opened, and a large quantity of coffee-coloured fluid was discharged, shortly after which a solid vascular growth protruded from the opening. This growth soon attained a large size, and was cut off; it again increased, and a ligature was placed round its base, which produced so much pain that the patient came to the Hospital, and the whole mass, with nearly all the mammary gland, was removed. The patient remained well for nearly two years, when the tumour, No. 3156, appeared, and increased rapidly. She recovered, and was in good health shortly after its removal.

FIBRO-ADENOMA (Chronic Mammary Tumour, Mammary Glandular Tumour, &c.).

3157. A small Fibro-Adenoma of the Breast; it was encapsuled, and the section presents an appearance of lobulation.

Microscopic Examination.—The tumour consists of fibrous tissue, containing tubules of gland tissue.

Removed from a woman, aged 31; she first noticed the lump nine months before its removal. —See *Sitwell Ward Book*, vol. vi, p. 62.

Microscopic specimens are preserved, No. 141.

3158. A Fibro-Adenoma, very distinctly lobulated; removed from the right breast of a girl, aged 18 years. It was discovered six months before the operation.

Microscopically it consists of new-formed gland tissue imbedded in fibrous, and loose mucous tissue.—*See* microscopic sections, No. 142; and a drawing A. 39.

3159. A small Tumour removed from the Breast. It is of oval form, nodulated on its surface, and invested by cellular tissue forming a distinct capsule. It is composed of a soft, elastic, semi-transparent, glistening substance, traversed by

opaque-white undulating fibres, of which the larger appear on the section to form partitions dividing it into several round masses. XXXIV. 22

Microscopically this tumour closely resembled the preceding specimen.

From a woman, 25 years old, in whom it had been growing two years, and had occasionally been the seat of severe pain.

Vide No. 3319, Series L.

CARTILAGINOUS TUMOUR.

3160. An oval nodulated Tumour, consisting of a mixture of cartilage and bone, which was removed from the mammary gland of a bitch. XXXIV. 13

FIBROUS TUMOUR.

3161. A portion of a very large Tumour, which was removed with a woman's breast. It is composed of an elastic, tough, white, homogeneous substance, arranged in closely connected lobes, and formed of fine fibro-cellular tissue, with compactly and irregularly woven filaments. The whole tumour was of an oval form, and weighed seven pounds. XXXIV. 18

Microscopically the tumour consists almost entirely of fibrous tissues.

The patient was between 30 and 40 years old. The tumour had been growing thirteen years, and produced little inconvenience, except by its weight. She used to sit with her breast resting on her knees, till the integuments began to slough. The mammary gland lay under the tumour, and appeared healthy. The patient recovered completely after the operation. The rest of the tumour is in the Museum of the Royal College of Surgeons.

MYXOMATA, SARCOMATA, AND ADENO-SARCOMATA.

3162. Section of a Tumour, which weighed eight pounds and occupied the situation of the mammary gland. The outer surface of the tumour is uneven, knobbed, and appears to have been loosely connected with the adjacent parts. Its section shows that it is composed of a light grey, semi-transparent substance, compact and glistening on the cut surface, and variously intersected by slender bundles of fibres. A few small cysts, with polished internal surfaces, are scattered in the substance of the tumour; and at the lower part of the section the cysts are filled by lobulated growths from their walls. XXXIV. 2

Microscopically the tumour consists of myxomatous tissue, containing small cyst cavities, with occasional tracts of fibrous tissue.—*See* microscopic sections, No. 143, and a drawing A. 43.

Vide Nos. 3288 and 3288A in Series L.

SARCOMA.

3163. Section of a Breast and of a large Tumour developed in the mammary gland. The tumour is spheroidal in form, and nearly three inches in diameter. It is composed of a very firm, compact, greyish substance, traversed by numerous undulating white fibrous bands. It is connected by loose cellular tissue with the substance of the mammary gland, which is pressed aside but appears healthy. XXXIV. 24

Microscopic sections were preserved, No. 146.

A drawing of the tumour is preserved, No. 525.

The tumour consists of fibrous tissue enclosing some gland-tissue, but in places it is largely composed of spindle cells.

3164. A Tumour, exactly resembling in its structure that in the preceding specimen. It separated by sloughing from the breast of the same person. XXXIV. 25

The patient was an unhealthy woman, 47 years old. The tumour in No. 3163 had existed many months, and, after an accidental blow, had grown fast and with much pain for seven weeks before the removal of the breast. About three months after the operation, when the wound had been long healed, the tumour in No. 3164 began to grow under the cicatrix. It increased rapidly, and in about three months, the integuments over it having ulcerated, it was

completely separated by sloughing. The cavity left by its separation ulcerated widely and deeply, assuming the characters of a great cancerous ulcer, and the patient died exhausted nine months after the removal of the tumour. Hard white tumours, of cancerous appearance, were found in the lungs. Some of them are in Series XI, 1740; and part of the patient's stomach is in Series XVII, No. 1903.

Vide No. 3296, Series L.

HARD OR SCIRRHOUS CANCER.

3165. Sections of a Mammary Gland and the surrounding fat, in which an irregular mass of scirrhous cancer is embedded. The morbid structure presents a very hard, dull greyish basis, interseeted by short bands, like fibres interwoven in a close irregular network. Some of these bands have a yellowish aspect, and on the surface of the lower section portions of the adipose tissue of the breast are seen enclosed within the cancerous substance. A few small cysts also are contained within it. The surface of the morbid structure is intimately adherent to the surrounding tissues, and, at one part, can scarcely be distinguished from them. XXXIV. 4

The patient was 63 years old. Her mother, sister, and another relative had died with cancer of the breast. She died four days after the operation, with abscess under the sterno-mastoid muscle. Parts of a large cyst in one of her ovaries are preserved in Series XLI, Nos. 2917, 2918, 2919.

3166. A Tumour, with a portion of skin, removed from a breast. The tumour is nearly spherical, and appears to have been slightly connected with the surrounding parts. It is of pale, firm, and uniformly close texture, and is intersected by fine undulating fibres, like partitions, imperfectly dividing it into lobes. XXXIV. 5

Microscopically it presents the ordinary structure of scirrhous cancer.—*See* microscopic sections No. 149; and a drawing, A. 51.

Presented by Dr. Conquest.

3167. Sections of a Tumour removed from the breast of an old woman. Its microscopic structure is that of a scirrhous cancer. XXXIV. 8

It had grown very slowly.—*See* microscopic section, No. 150.

3168. Section of a Breast and of a large Hard Cancer imbedded in it. The nipple is retracted to the surface of the tumour, and appears sunk in a deep pit in the integuments of the breast. The cancerous structure exhibits a pale dull-greyish basis, intersected in every direction by short wavy lines, like bundles of white fibres, which mingle together in a close irregular network. This fibrous structure is most distinct about the centre of the mass; its exterior appears more homogeneous: its whole substance was almost incompressibly hard. The surface of the tumour is closely united to the surrounding tissues: its outline is irregular, small lobes extending from its surface into the adjacent fat. XXXIV. 14

From a woman 60 years old.

3169. Part of a Breast, in which the mammary gland contains two distinct tumours. One is a small round circumscribed mass, separated by a distinct capsule from the surrounding tissues, and consisting of a firm, elastic, pale substance, with white undulating lines forming imperfect partitions in it. At one portion also it presents the appearance of lobulated growths, filling small cysts, as in Nos. 3154 and 3162. The other tumour is a smaller and rather flattened mass, intimately united to the parts around it, very hard, greyish, densely and intricately interwoven with fibres. XXXIV. 17

The patient was a woman, 42 years old. The first described, fibro-cellular, tumour (? adenoma), had existed four years; the other, a hard cancer, had existed four months, and was growing slowly to the time of the removal of the breast.

3170. Section of a Breast and of a small Hard Cancer situated just below the

nipple. The part of the tumour nearest to the skin has softened, and exhibits on its section a small irregular cavity which was full of grumous semifluid substance. There are smaller and less completely softened spots in other parts of the growth. The skin and other tissues are healthy; but the nipple is retracted. XXXIV. 12

From a lady, between 40 and 50 years old. The disease returned before the wound of the operation had completely healed.

3171. Section of a Scirrhous Cancer of the whole mammary gland from a man. The cancer forms an irregular, rounded mass, nearly two inches in diameter; it is intensely hard, pale-greyish, with branching white lines and small yellow spots. It has extended to that part of the skin which is stretched tensely over it, and to the nipple, which is depressed and enlarged on the centre of its surface. At its deepest part fibres of the great pectoral muscle are included in its substance. XXXIV. 26

The patient was 48 years old, of healthy aspect. He had observed the disease for six months. It had increased quickly, and had been painful for two months. Two axillary glands were similarly diseased, and were removed with the breast. The patient recovered from the operation.

A drawing (No. 529) shows the appearance of the disease when recent.

3172. Scirrhous Cancer of the mammary gland from a man. The disease presents nearly the same characters as in the specimen last described, but is less extensive. The skin over the cancer is excoriated, and the nipple is retracted. XXXIV. 27

The patient was 45 years old, and the disease had been observed in progress for about thirteen months before his death. He had extensive cancerous formations in the spine and other bones. Part of his spine is in Series V, No. 1131.

3173. Sections of a Mammary Gland, the whole of which is occupied by Scirrhous Cancer. In the upper specimen one half of the gland is shown dissected from the parts around it; in the lower, the other half is embedded in the surrounding fat. The former specimen shows that the shape of the gland is retained, even while its structures, with the exception of little more than its larger ducts, are replaced by cancer structures forming an intensely hard and compact substance. The latter specimen shows, especially, the deep retraction of the cancerous nipple, the small size of the cancerous mammary gland, the branchings of its larger ducts, and the abundant fat around them. XXXIV. 30

The patient was about 50 years old. The disease had probably been in progress for about six months before its removal. It recurred in two years and three quarters, and she died rather more than three years after the operation.

3174. Section of a Mammary Gland, with a well-marked example of rapidly growing Scirrhous Cancer. The whole breast appears to have been large. The cancerous mass, of large size and oval form, occupies the greater part of the gland, and is imbedded in the surface of the pectoral muscle. The section of the cancer shows a texture much less compact and dense than that of the preceding specimen, and varied in aspect by the intermingling of the white lobed portions of the mammary gland involved in the cancerous infiltration. A section of a similarly cancerous lymphatic gland is suspended above the section of the breast. XXXIV. 29

3175. Scirrhous Cancer of the right Mammary Gland removed from a man, aged 62 years. It had existed for twelve months. Five or six enlarged and indurated glands, in which, however, no cancer structure could be detected, were at the same time removed from the axilla. The tumour forms a circumscribed oval mass, surrounded by adipose tissue.

3176. Ulcerated Scirrhous Cancer of the left male Breast, removed from a man,

aged 41. The disease had existed eighteen months. Some large cancerous glands were removed from the corresponding axilla. XXXIV. 35

3177. A Scirrhous Cancer of the Breast, in which after the disease had been six or more years in progress, and had ulcerated and protruded through the integuments, it ceased to increase, shrivelled, and partially healed. It appears now as a dry lobed mass closely fixed to the ribs and intercostal muscles.

Presented by Mr. Sturt.

3178. A portion of a Hard Cancer of the Breast. On the surface of the section the orifices of dilated ducts are seen; some of them are of considerable size. They are imbedded in a firm fibrous material. Worm-like masses of a curdy material could be squeezed from the ducts in the recent state.

Microscopical Examination.—The tumour is made up of fibrous tissue, much less formed and dense than in ordinary scirrhous cancer. Everywhere dilated ducts are seen; the smaller can in some places be traced, dividing and opening into dilated alveoli, which, as well as the smaller ducts, contain a yellowish granular material, which does not stain with hæmatoxylon. A few acini of nearly normal size, and containing a few nuclei irregularly scattered in their interior, are seen, and from this every transition to extreme dilatation is seen. Nuclei are in some cases thickly grouped in the lymph spaces around the acini, and large groups of nuclei having a similar appearance are met with in the substance of the tumour.

History.—From a woman, aged 45. The tumour was first noticed three months ago, when it was half its present size. It has been growing quickly without much pain. Her father's mother died of cancer.—See *Lawrence Ward Book*, vol. vi, p. 346.

3179. Section of a Scirrhous Cancer in a woman's breast. The cancer structures occupy the whole mammary gland, and much of the skin over it; and protrude through the skin with a deeply ulcerated surface. The section through the substance of the cancer shows a firm, close-textured, white substance, well defined, intersected by short branching white lines, and dotted with what appear to be orifices of lactiferous tubes filled with a yellowish material. The ulcerated surface is deeply and unequally excavated, and coarsely nodular; its border is elevated, slightly everted, sinuous, and, in part, surrounded by nodules of the cancerous substance, elevating and thinning the adjacent skin.

XXXV. 98

The patient was 50 years old when the disease commenced. After nearly two years of painless progress, and four months of ulceration, it was removed with the breast, and some diseased axillary glands. Within three months after the operation small cancerous tubercles began to form in the skin about the scar, and in twenty months the patient died.

3180. A Scirrhous Cancer of the Breast. The skin and surrounding gland and cellular tissue have been separated from the tumour, which is of an irregular disc shape and of extreme hardness. The tumour is composed of a dense fibrous tissue, in the centre of which is an oval nodule about the size of a small chesnut, and as hard as bone; a distinct line of separation is seen between it and the surrounding growth. Imbedded in the very dense fibroid tissue of which the nodule is formed are numerous large granules and conglomerations of calcareous matter, which caused it to cut like bone.

The microscopic characters of the tumour were those of scirrhous cancer; the cells were very abundant. The central part of the calcareous nodule was composed of a dense fibrous tissue, containing no cellular elements; towards the periphery the characters more and more approached those of the surrounding tumour.

From a woman, aged 54 years, who had noticed the tumour six weeks before applying for advice; during that time it grew considerably. It presented the ordinary characters of scirrhous cancer. She had noticed some small lumps in the breast since she was fifteen years of age.—See *Stanley Ward Book*, vol. vii, p. 52, 1878.

Microscopic sections are preserved, No. 151.

3181. A sloughing Cancerous Mass from the Breast of a woman, aged 59 years,

in whom it had existed for two years. The skin over the breast was first destroyed by acid pernitrate of mercury; and chloride of zinc was afterwards applied to the substance of the cancer at intervals of a day or two. The whole process lasted about a fortnight, and the slough (preserved) was separated four weeks after the first application of the caustic.

Vide No. 3330, Series L.

SOFT OR MEDULLARY CANCER.

3182. Section of a Breast, showing a cyst immediately beneath the nipple, which contained pus. The lining membrane was injected; springing from it are some ragged proliferations. The cyst is encircled by new-growth, which in some parts attains a thickness of an inch. The axillary glands were enlarged, hard, and infiltrated.

Microscopic Examination.—The new-growth around the cyst and the proliferations have the structure of soft cancer.

From a woman, aged 39 years. Eighteen months before her admission to the Hospital, she noticed a lump in the breast as large as a walnut, which gradually increased in size. On admission the breast was occupied by a soft, fluctuating swelling, from which ten ounces of sero-sanguineous fluid were evacuated by a trocar. No solid growth could be detected before the removal of the fluid. Suppuration in the cyst subsequently took place and the breast was removed.—See *President Ward Book*, vol. vi, p. 222.

3183. Part of a Mammary Gland, including a section of a tumour imbedded in its substance. The tumour is oval, circumscribed, and closely connected with the substance of the gland, though separable from it, and invested with a thin capsule. Its consistence is firm and tough; its cut surface smooth, uniform, with no appearance of lobes, or fibres, or other distinct texture; in the recent state, greyish, with a yellowish-green tinge, and in parts suffused with a deep crimson, bloody hue. Its minute structures were, partly, cells with large clear nuclei, like those of medullary cancer, and, partly, many-nucleated oval, flask-shaped, and other bodies. XXXV. 10

The patient was 45 years old. The tumour had been observed for four months. She recovered favourably from the operation for its removal; but, five years afterwards, scirrhous cancer began to form in the part of the breast left in the operation. (A sister of the patient was, at the same time, in the Hospital with scirrhous cancer of the breast.) In a second operation the cancer and all that remained of the breast were removed; and the patient continued free from apparent disease for nearly two years, when a tumour began to form in the other (right) breast. This being removed was found to be a growth, like the specimen here preserved, except in that it had a large central cavity filled with blood-coloured fluid. The woman was in good health six years after the last operation.

3184. A Tumour removed from a Breast. It consists of a close-textured medullary substance, and in its lower part were small cells full of blood. XXXIV. 6

The histological characters of the tumour were those of medullary cancer.
See a microscopic section, No. 152.

COLLOID CANCER.

3185. Portion of the Breast of a woman, aged 40 years, with a mass of colloid cancer in its substance. The tumour had been growing for two years and a half before its removal.

Presented by Mr. A. Winkfield.

MELANOTIC TUMOUR.

3186. Section of a Mammary Gland, exhibiting a deposit of melanotic matter, both in small round masses and in a more diffused form. XXXIV. 10

From a young woman in whom there were similar deposits in several other organs. The primary disease is in Series XL, No. 3315.

FIBROUS TUMOUR OF THE NIPPLE.

3187. A Lobulated Tumour of the Nipple, of nine years' growth. The tumour is suspended by the nipple which formed its pedicle.

It is composed entirely of well-formed fibrous tissue; and the surface is covered by epithelium.

A microscopic section is preserved, No. 154.

Presented by Dr. Harbinson, of Lancaster.

SEBACEOUS CYST ON THE SURFACE OF THE MAMMARY GLAND.

3188. Section of a Sebaceous Cyst filled with firm sebaceous material, which was removed from the breast of a woman. The cyst is covered by a portion of skin which is closely adherent to it.

Before removal the cyst was supposed to be a solid new growth. There were several sebaceous cysts on the scalp, and one or two on different parts of the body.

SERIES XLIX.

ANATOMY OF STUMPS AFTER AMPUTATION OF LIMBS.

CONDITIONS OF THE BONES OF STUMPS.

CLOSURE OF THE MEDULLARY CANAL.

3189. Portion of a Femur from a Stump. The medullary cavity is completely closed, and there are two pointed processes of bone which extend upwards from the posterior part of the end of the femur and probably afforded attachment to the flexor muscles.

3190. The Stumps of a Tibia and Fibula after amputation just below the knee. Their medullary cavities are nearly closed by a layer of bone, and they are scarcely reduced in size ; but their texture is very light and greasy. A. 159

After the amputation the stump healed ; but it ulcerated afresh as often as the patient returned to his work : a second amputation was therefore performed, and the patient did well.

3191. Section of a Tibia from a Stump, exhibiting the reparative changes which have taken place in the sawn end of the bone. The medullary cavity is closed by a thin layer of new bone, and other thin osseous deposits are formed around the end of the stump. I. 120

3192. Portions of a Tibia and Fibula from a Stump. At the extremity of each bone the medullary cavity is completely closed by new bone ; and a bridge of new bone extends between the tibia and fibula, uniting them firmly together. I. 122

3193. The greater portion of the left Tibia and Fibula of a woman, aged 35. The two bones are joined by an intermediate portion of new bone at their lower ends. For some distance above this, the surfaces, especially that of the fibula, are roughened by the deposition of new bone, the most abundant of these deposits corresponding to the situaton of ulcers in the soft parts. Both bones are lighter than natural, the compact wall being reduced in thickness.

The leg was amputated, in the first instance in its lower third, for disease of the ankle joint, the stump progressed very favourably for a few weeks, but never quite closed ; subsequently ulceration commenced in the linear wound and adjacent cicatrix and very gradually extended over the extremity of the stump. Other ulcers afterwards formed higher up the limb. The general health seemed to be unaffected. All attempts to heal the ulceration having failed, a second amputation was performed just below the knee-joint by double flaps of the integuments. The second stump healed rapidly and completely.

ADHESION OF THE TENDONS TO THE EXTREMITY OF THE BONE.

3194. A Foot, of which the toes and metatarsal bones have been amputated.

The bones are evenly united, and the cut extremities of the tendons are firmly adherent to the bones at the extremity of the stump.—*Vide* Nos. 3211, 3213.

ATROPHY OF THE BONES OF STUMPS.

Vide Nos. 3 and 5, Series I.

EXCESSIVE FORMATION OF NEW BONE AROUND THE STUMP.

3195. A portion of Femur, which formed the extremity of a stump. Its lower end is enlarged, condensed, and the medullary canal is filled up; the surface is roughened by deposit of new bone, which is perforated by two small apertures leading into cavities containing necrosed bone. The patella is adherent to the extremity of the bone. Primary amputation was performed two years before the removal of the specimen.

3196. Portion of a Femur, which formed the extremity of a stump after amputation of the thigh by rectangular flaps. Around the extremity there is a copious deposit of new bone. A portion appears to have been detached by an oblique fracture, drawn upwards, and subsequently anchylosed. A. 163

3197. The remaining portion of the Femur of the man from whom the preceding specimen was taken. The extremity exhibits a return of the same disease which became apparent within a few months after the last operation. The bone was removed by amputation at the hip joint, and the man died. A. 165

3198. Portions of a Tibia and Fibula from a Stump. The fibula is united to the tibia by ossification of the interosseous ligament. An irregular deposit of new bone has taken place on the external surface of both bones for a considerable distance above their extremities. I. 144

CARIES.

3199. The upper half of the right Femur and Acetabulum of a man, aged 35, who died five weeks after amputation through the middle of thigh. The portion of the femur was bare. It has a worm-eaten appearance from ulceration, and there are considerable exfoliations partially separated. The lower portion is invested by new bone. The sawn extremity was in process of separation, and where the line of demarcation appears there is greater abundance of new bone, especially in one spot, where it forms a considerable outgrowth. The entire acetabulum is carious, and its floor is perforated. The man had been employed for many years in arsenic and copper works. The limb was removed for inflammation of the lower part of the femur. No arsenic could be detected in the diseased bone. A. 170

NECROSIS.

3200. Portion of the Shaft of a Humerus separated by exfoliation, after Necrosis following amputation. I. 164

The patient was a middle-aged man. The amputation was performed on account of a compound fracture.

3201. Portion of the Femur from a stump. A circle of bone at the extremity of the stump has separated after necrosis. A considerable deposit of new bone has taken place upon the surface of the femur, and forms a thick ring above the part from which the dead portion separated. I. 155

3202. A portion of the Shaft of the right Femur in a state of necrosis, from a man, aged 24, whose thigh was amputated in its lower third twelve months previously, in consequence of a severe injury to the leg. The wound healed favourably, but while moving about a few weeks after the operation he fell and struck the stump. From that time the limb became painful, and the extremity

of the bone gradually enlarged. Subsequently, fistulous apertures appeared in various parts about the extremity of the stump. A simple incision across the face of the stump exposed the end of the bone, which was seized, and the dead portion drawn out from a well-defined cavity lined with a smooth, soft, and vascular membrane. The walls, of considerable thickness, were formed of new bone.

3203. Section of a Femur from a Stump, exhibiting an irregular osseous deposit upon its surface, immediately above its extremity, which has perished. I. 142

3204. Ring of Bone exfoliated from the end of a Femur after amputation. I. 179

3205. Ring of Bone exfoliated from the end of a Tibia after amputation. I. 187

CONICAL STUMP.

3206. The end of the Stump of a Humerus. I. 300

Amputation was performed, on account of an injury of the arm, when the child, from whom this specimen was taken, was about 4 years old. The stump healed without prominence of the bone, but, in about a year, the bone had grown so much more than the soft parts, and had become so prominent, that it was necessary to remove this portion, which is nearly an inch in length.

3207. A Thigh Stump in which the conditions which lead to a conical stump are seen in progress. It has been injected with carmine, and a section made through it from before backwards. The bone protrudes two or three inches beyond the flaps; its extremity is bare and dead; a fine rim of bone has separated from the outer half. Above the dead extremity the protruding bone is covered by granulations, beneath which is a considerable heaping up of new periosteal bone (as may be seen on the surface of the section). The medullary canal is enlarged towards the extremity of the bone by the absorption of the compact tissue. The femoral vessels are dissected out. Springing from the end of the artery are a large number of adventitious vessels. The artery itself terminates in a fibro-cellular cord which is adherent to the bone: just above its termination the vessel is dilated and makes a bend; here it is filled by an organised clot, which is tunnelled and has been penetrated by the injection. The vein is plugged throughout its whole length by a firm clot. It terminates in a fibro-cellular cord close to the artery; a small piece of glass is inserted between them.

From a man, aged 46 years. His thigh was amputated in the lower third for acute abscess of the knee-joint. The end of the bone made its way through the anterior flap.

He died forty-four days after the amputation, from phthisis.—See *Pitcairn Ward Book*, vol. v, p. 302.

3208. Sections of the extremity of a Stump after amputation above the knee. The lower end of the bone protrudes nearly an inch beyond the extremity of the granulations upon the soft parts. The protruded portion and that immediately adjacent to it had died, and were in process of exfoliation. On the surface of the section, the line of separation between the dead and the living bone is marked by an arched layer of soft fleshy substance, like a layer of granulations, which extends across the cancellous tissue, and is continued less distinctly through the compact wall. In the upper section, the periosteum and soft parts have been separated from one side of the bone. The surface of the latter is left rough and irregular, and in the lower part of the periosteum a mass of soft spongy osseous tissue has formed, which nearly surrounds that part of the shaft which was not in a state of necrosis. I. 211

From a patient in whom the femoral artery was tied for the cure of a traumatic aneurism. After the operation, extensive sloughs formed in the leg, and it was deemed necessary to

amputate it above the knee. The stump sloughed, and the femur protruded; the parts preserved in the preparation were removed by a second amputation, a month after the first. The patient subsequently recovered completely.

3209. The ends of the bones removed from the Stump of the Leg. The bones have coalesced and grown downwards in a pointed process about one and a-half inches long. The medullary canal extends nearly to the end of the process.

From a boy, whose leg was amputated for an injury; about five years afterwards re-amputation was performed for conical stump, produced apparently by the growth of the bones without a corresponding growth of the soft parts.

FORMATION OF BULBOUS ENLARGEMENTS ON NERVES AT THE EXTREMITIES OF STUMPS.

3210. Portion of a Scapula, with the Axillary Nerves and Artery, from a person in whom amputation of the arm at the shoulder-joint had been performed a considerable time before death. The several nerves are firmly united together, and their extremities form hard bulbous swellings, which are adherent in one mass to the cicatrix in the skin. VIII. 4

3211. Section of part of a Femur, with the nerves, vessels, and muscles, thirty years after amputation. The medullary cavity is closed for some way above the end of the bone. The extremities of the popliteal and peroneal nerves are united in one bulb-like enlargement, which is attached to a dense white tissue, continued from the muscle, nerves, and vessels, to the end of the bone. VIII. 15

3212. Portion of a Femur, with the ischiatic, and a branch of the anterior crural, nerve attached to it; from a Stump. The ischiatic nerve presents a small bulb-like swelling at its extremity, which was united by dense cellular tissue to the integument of the stump and to the end of the bone. The branch of the anterior crural nerve presents, in relation to its size, a larger bulb at its extremity, which was united in the same manner to the end of the bone and to the integument. Between the two nerves a triangular and flat spiculum of bone has arisen from the outer surface of the femur. VIII. 9

3213. A Stump of a Leg re-amputated on account of constant pain and ulceration.

From a man, aged 30 years. There was marked thickening of the sheath of the musculo-cutaneous nerve, which was also in a state of tension. The nerve was traced down to an ulcer, at the extremity of the stump, where it is probable its free extremity was exposed. There are the usual bulbous enlargements of the posterior tibial and other nerves.—See *Darker Ward Book*, vol. ii, p. 190.

SERIES L.

GENERAL PATHOLOGY.*

HYPERTROPHY.

3214. A Heart, showing extreme hypertrophy of the left ventricle, the wall of which is at one part two inches in thickness. The ventricular cavity is somewhat enlarged. The mitral valves are slightly thickened: the aortic are normal: the inner cusp of the tricuspid valve is adherent to the ventricular septum, which projects into the cavity of the right ventricle.

Microscopic Examination.—The muscular fibres composing the papillæ and wall of the left ventricle were granular, and the striæ were indistinguishable from fatty degeneration.

From a blacksmith, aged 35 years, who fell down dead in the street. He had not previously complained of ill-health. The heart weighed 2 lbs. 6 oz. The kidneys, brain, and other organs were healthy.

The specimen is an illustration of the fatty degeneration which commonly supervenes on hypertrophy of the heart.

Presented by Dr. Yarrow.

3215. A Urinary Bladder and Penis. One inch of the length of the urethra immediately anterior to the bulb is closely contracted. In consequence of this obstruction to the passage of urine, the bladder is hypertrophied. Its muscular coat is greatly increased in thickness, measuring about half an inch through. The muscular fasciculi on the inner surface project in strong columns or ridges, between which the mucous membrane is depressed. The mucous membrane is smooth, and though thicker than usual, is not indurated: it appears only to have acquired additional strength in correspondence with the other hypertrophied textures of the organ.

3216. Skull of a child, about 10 years old, exhibiting enlargement of all the bones, especially the parietal and occipital, in adaptation to the enlargement of the brain by hydrocephalus. The bones are very thin and light; and the inferior occipital fossæ bulge out in large rounded prominences.

ATROPHY.

3217. The Skull of an old edentulous female, exhibiting atrophy of the jaw-bones and of the parts immediately connected with them, in consequence of the loss of the teeth. The alveolar margins of both jaws are completely absorbed; so that the alveolar border of the upper jaw is nearly on a level with the surface of the hard palate, and that of the lower jaw is but just above the mental foramina. Scarcely a trace of a tooth-socket can be seen; the margins of the jaw-bones

* For other specimens in the Museum illustrating General Pathology, see the Table of References at the commencement of the volume.

are rough and hard. The whole texture of both maxillary and palate bones is light, dry, and smooth-surfaced. The hard palate is, except in the median line, so thinned that it is transparent and flexible. The circumference of the lower jaw is in every way more extensive than that of the upper jaw: the surfaces of the rami and angles present scarcely a trace of the attachment of the muscles: the rami are placed obliquely, and are at an obtuse angle with the body of the jaw. There appears to be also a general diminution in thickness and weight, and probably also in the size, of all the bones of the skull; and there is a peculiar flattening and shelving of the frontal and parietal bones on either side of the coronal and sagital sutures. The frontal suture remains ununited, and the other sutures are open, with the exception of the middle of the sagital.

3218. Portion of a Cerebrum, with the Optic Nerves, and some remains of the Left Eye. The eye is contracted, in consequence of the escape of its humours, and the left optic nerve is atrophied from disuse. The diminution in size extends from the retina to the optic commissure. Between the commissure and the optic thalamus, the nerve on the right side is smaller than that on the left, and the right thalamus is smaller than the left. VIII. 3

From a person who had been blind in the left eye, from childhood, in consequence of small-pox.

FATTY DEGENERATION.

3219. Dissection of a Left Leg and Foot, showing fatty degeneration of the muscles and talipes equino-varus as the result of paralysis. The muscles preserve their normal form and size, but are completely converted into fat; an indistinct striation is still visible. The change affects uniformly all the muscles of the leg, but a small patch of normal muscular fibre is in places seen on the surface of the gastrocnemii. The foot is immovably fixed in a position of talipes equino-varus, and the plantar fascia is contracted.

From a girl, aged 17 years, both of whose legs became paralysed when she was three years old. The left leg was smaller than the right, cold and blue, and was so cumbersome to her, that amputation was thought advisable.—See *Sitwell Ward Book*, vol. vi, p. 93. See also a similar specimen, No. 13 in Series I.

3220. A section of a Liver, showing fatty infiltration. The section is smooth and mottled of a yellowish-white colour, owing to the infiltration of the cells at the periphery of the lobules with fat.

CALCAREOUS DEGENERATION.

3221. A Femoral Artery, converted into a rigid tube, by an almost uniform deposit of calcareous matter in its wall. The appearance of transverse striation is due to the arrangement of the muscular fibres of the middle coat, in which the deposition takes place.

The other arteries from the same leg are in No. 1435, Series VIII.

3221a. Bronchial Glands, enlarged and thickly infiltrated with calcareous matter.

From the collection of J. R. Farre, Esq., M.D.

3222. A very large, completely calcified Uterine Fibroid, which weighed 2 lbs. 4oz. It was found loose in the abdominal cavity, and had produced no symptoms during life.—See *Pathological Society's Transactions*, vol. xxxii, 1881.

Presented by Dr. Norman Moore.

3223. A Tumour, which was found loose in the cavity of the abdomen. It consists of a very hard and compact laminated substance, like fibro-cartilage, with deposits of earthy matter in its centre. XXXV. 17

It is probable that the tumour was a pedunculated sub-peritoneal fibroid of the uterus, which became separated, as in Specimen No. 3293.

Presented by Thomas Ilot, Esq.

REPAIR AND REPRODUCTION OF INJURED AND LOST PARTS.

FORMATION AND STRUCTURE OF CICATRICES.

3224. Portion of Skin, exhibiting a greater degree of vascularity in the situation of a recent cicatrix. XI. 14

3225. A similar specimen. XI. 15

3226. A Hand, in which (in consequence of an injury) a part of the thumb was lost, and the integuments of the palm and the fingers were contracted in the process of cicatrisation.

Vide No. 2079, Series XIX.

TRANSPLANTATION OR GRAFTING OF PARTS.

Vide No. 1775, Series XII.

EFFECTS OF THE CONTINUED PRESENCE OF FOREIGN BODIES IN THE TISSUES.

3227. Section of the Gizzard of a Turkey, with part of a needle in its muscular substance. The tissue around the needle is white and indurated. XV. 30

Presented by Mr. Henry Jones, jun.

PROCESS AND EFFECTS OF INFLAMMATION.

COMPLETELY ORGANIZED EFFUSIONS OF LYMPH PRODUCING ADHESIONS, FALSE MEMBRANES, &c.

3228. Portions of Abdominal Muscles, and of a Colon. The peritoneum lining the muscles is connected with that covering the intestine, by a newly formed membrane of considerable extent, in which many large blood-vessels are displayed by injection. XVI. 57

INDURATION AND SCLEROSIS FROM INFLAMMATION.

3229. A Granular Contracted Kidney. The kidney is firm, tough, and the distinction between the cortical and medullary portion is almost lost, owing to the increase of the interstitial connective tissue of the organ, which is much diminished in size. The surface is granular and the capsule adherent. Some small cysts are scattered here and there in the parenchyma and on the surface.

3229a. A section of a Tibia, which is enlarged, heavy, and very irregular on the surface. In the section all trace of the distinction between the compact and cancellous tissue is lost, and the osseous tissue is for the most part condensed and close-textured (sclerosed), but in places finely porous. These changes were the result of long-continued chronic inflammation.

SUPPURATION.

3230. Portion of a Liver, exhibiting a small Abscess near its surface. The boundary of the abscess is formed by the irregularly broken substance of the liver. XVIII. 9

3231. A small Abscess Cavity on the superior surface of the Liver of a child. —See *Post Mortem Book*, vol. vii, p. 226.

3232. The Wall, consisting of the pyogenic membrane, of a large circumscribed Abscess, removed from one of the middle lobes of a cerebrum. Its internal surface is smooth, and lined by lymph, of which some has been turned off in a layer; its external surface is covered by shreds and flocculi from the adjacent cerebral substance; its walls are moderately tough and about half a line in thickness. VI. 66

The patient was a middle-aged man, and had had only some slight and obscure signs of disease of the brain.

ULCERATION.

3233. An Ulcer of the integuments of the Leg, the base of which is adherent to the surface of the bone.

3234. Portion of an Ileum, exhibiting two ulcers of the mucous membrane. Both the ulcers extend completely round the intestine, and their margins are irregular and shreddy. XVI. 11

MORTIFICATION: DEATH OF PARTS OF THE BODY.

3235. A portion of Skin that sloughed after injury, and was separated by ulceration of the adjacent tissues. XI. 35

It illustrates the death of parts as the direct effect of mechanical force. A girl was bitten by another on the back of her hand. The piece of skin included between the teeth was not cut, or apparently bruised; it did not become inflamed, but with the blood coagulated in its vessels, it became, in about forty-eight hours, brown and dry, and was then gradually separated.

3236. The Feet of a girl, which mortified and sloughed off after exposure to cold. APPENDIX. 8

The patient, 19 years old, slept in the street during a cold night. In the morning her feet were found frost-bitten, and were put into warm water. No operation except the sawing through the bones was necessary for their removal.

3237. The Feet of a girl, aged 7 years, which mortified after typhus fever.

3238. The Toes of the left foot of a Negro, aged 22 years, which separated after dry gangrene.

While on board ship in very cold weather, he noticed that the left foot became swollen and the toes painful. On admission to the Hospital shortly after, the toes were found to be in a state of dry gangrene. They separated during a period ranging from six weeks to five months.—See *Pitcairn Ward Book*, vol. vi, p. 242.

A drawing of the specimen is preserved, No. 536.

TUBERCLE.

3239. Portion of the Peritoneal and Muscular Coats of a Jejunum, dried after the minute injection of the blood-vessels. Numerous small, oval, flattened masses of yellowish tubercle are scattered in the subperitoneal tissue. XXXV. 27

TUMOURS AND OTHER ALLIED MORBID GROWTHS.

FATTY TUMOURS—LIPOMATA.

3240. A Fatty Tumour, removed from the subcutaneous tissue of an arm. Though lobed and irregular in shape, it has an almost exact bilateral symmetry. In structure it may be taken as a type of its kind. XXXV. 67

3241. A Fatty Tumour, of elongated oval form, which was removed from the posterior part of the trunk of a boy 10 years old. XXXV. 32

It was situated beneath the part of the integuments upon which the spring of a truss had pressed.

3242. Two Fatty Tumours of equal size, which were symmetrically placed on the front of either shoulder of a middle-aged woman.

3243. A round, pendulous Fatty Tumour, covered in great part by healthy skin, which was removed from below the buttock of a healthy middle-aged man. Its tissue is variously lobulated; the cellular partitions of its lobes are tougher than is usual; its base extended deeply and widely in the subcutaneous adipose tissue. XXXV. 43

3244. A large Fatty Tumour, removed by operation from the axilla of a man, aged 37. He had discovered its presence only a few days previously. It caused little or no inconvenience to the movements of the arm. XXXV. 120

3245. A Fatty Tumour, removed from the subcutaneous tissue of the ball of a thumb. It has the ordinary structure and texture of this form of tumour, and was loosely connected with the adjacent parts. It is of spheroidal shape, and about an inch and a half in diameter. XXXV. 78

3246. A lobulated Fatty Tumour, removed from the space between the first and second metacarpal bones of a man's hand. XXXV. 115

3247. A Fatty Tumour, removed from the palm of a hand, in which it was very loosely connected with the surrounding tissues. It is very elongated, slender, and lobed; and, along one of its borders, a thin layer of connective tissue is attached, like a little mesentery. XXXV. 68

3248. A Pedunculated Fatty Tumour, which was removed from over the anterior superior spine of the ilium.

From a subject brought to the Hospital for dissection.
Obtained by W. J. Walsham, Esq.

3249. A Fatty Tumour, which had descended from the abdomen into the inguinal canal of a woman. It lay in a peritoneal sac and was connected with the interior of the abdomen by a thin band or pedicle of fibrous tissue, but with what structure is uncertain. Slight symptoms of strangulation were produced, in consequence of which herniotomy was performed; the sac was opened and the tumour removed. The patient made a good recovery. The tumour is composed of adipose and nucleated fibrous and granular connective tissue. It was probably derived from the omentum.—See *Pathological Society's Transactions*, vol. iii, 1875.

Presented by H. T. Butlin, Esq.

3250. Sections of a large mass of substance removed after death from a man's groin. It is coarsely laminated, yellow, and like firm fat. A tendon, with separated fasciculi, passes through it. XXXV. 106

3251. A congenital Fatty Tumour, containing a stalk of hyaline cartilage. It was removed from the perineum of a boy 6 months old. Two warty growths having the same structure as the tumour projected from its surface; one from the front, the other from the back.—See *Stanley Ward Book*, vol. vi, p. 33, and *Lucas Ward Book*, vol. v, p. 322. XXXV. 152

FATTY TUMOURS, PORTIONS OF WHICH HAVE UNDERGONE CALCIFICATION.

3252. Portion of a Fatty Tumour, which extended along the whole front of the thigh, and weighed several pounds. The tumour is divided by septa of dense connective tissue, which in places had undergone calcification, and thus large plates of bone have been formed. It was removed from an Arab Sheik.

Presented by Dr. Mackie, of Alexandria.

3253. A large Fatty Tumour, containing at its lower part a large mass of bone-like tissue, probably formed by calcification of the connective tissue septa.

It was removed after death from a man, aged 94 years, and had existed fifty years, reaching its present size thirty years before death.

Presented by R. Oke Clarke, Esq.

3254. A pendulous Fatty Tumour removed after death from the upper and inner part of the thigh of a man, aged 73 years. The patient stated that it had existed as long as he could remember. A large round mass of calcified tissue is cut across at the upper part of the tumour.

Presented by Alfred Winkfield, Esq.

3255. A large, flat, lobulated, Fatty Tumour, removed from the thigh. In the centre of the tumour is an irregular mass of substance like bone. XXXV. 11

SLOUGHING OF THE SKIN OVER FATTY TUMOURS.

3256. A large Fatty Tumour, removed from a perineum. Its base was imbedded in the sub-cutaneous fat, and it was pendulous. It has the ordinary lobed structure and general characters of its kind; but it protruded, at its most dependent part, through the skin, and here displays its difference from a protruding cancerous growth. Its exposed lobes project but little beyond the ulcerated opening in the skin; one of them has a thin slough on it; the others are scarcely different from those that lie deeply. The edges of the ulcerated opening are thinly bevelled, inverted, partly covered with new cuticle, like those of a healing ulcer; and at part of the opening they appear united with the subjacent surface of the tumour. XXXV. 69

The patient was a stout, healthy woman, 59 years old. The tumour had been growing for seven years.

OSSEOUS TUMOURS—OSTEOMATA.

3257. An Inferior Maxilla. Two symmetrical eburnated exostoses spring from the inner surface of the alveolar portion of the bone on either side of the symphisis, corresponding in position to the bicuspids and first molar teeth. The markings and slight lobulations of the bony outgrowths are also more or less symmetrical. The rami of the jaw are unusually widely separated.

The bone was found in a churchyard; it is evidently that of a young person, since the "wisdom" teeth have not yet appeared.

Presented by Mr. Rumboll.

3258. Portions of a Tumour removed from the inferior border of the scapula. The greater part of the tumour, including all that by which it was attached to the scapula, consists of hard cancellous bone, the cells of which, formed like

those of the natural bones of the skeleton, are filled with healthy looking marrow. The outer portion of the tumour consists of a layer of greyish-white transparent cartilage, like that of the fœtal skeleton, investing the osseous part, and itself invested by a layer of fibrous tissue. The general form of the tumour is an irregular oval, and its surface is deeply nodulated. XXXV. 50

It was removed from a man between 20 and 30 years old. He recovered from the operation.

3259. A portion of an Exostosis, composed of cancellous tissue, and covered with a layer of hyaline cartilage.

It was removed by operation from the outer surface of the head of the humerus of a young child.

3260. Part of the Falx Cerebri with an isolated portion of bone imbedded in it. VI. 82

CARTILAGINOUS TUMOURS—ENCHONDROMATA.

3261. An oval Tumour as large as a goose's egg. It is composed of distinct irregularly shaped masses of cartilage, the surfaces of which are finely nodulated. The masses are united together by fine bands and filaments of delicate connective tissue. The tumour is surrounded by a definite capsule, which is firmly adherent to the cartilaginous mass; within the portion of the capsule reflected two small, firm, fibrous nodules are seen; nodules of cartilage are also attached to it by delicate threads. On section, the nodules or masses of cartilage present a uniform aspect; in some there are small patches of calcification; in others, the whole mass is calcified and extremely hard (a section of such a mass is suspended in the bottle). Connected with the capsule, several bands or stalks of connective tissue were found, on which large and small nodules of firm fibro-cellular tissue were arranged like grapes on a stalk. One of these also is suspended.

Microscopic Examination.—The nodules were composed of fibro-cartilage, except those indicated in the description, which consisted of dense fibrous tissue. Microscopic sections are preserved, No. 159.

The tumour, which projected from the inner side of the arm, just below the axilla, was removed from a young woman, aged 29 years; it was first noticed six years before, and was not adherent to the skin or deeper tissues. Hard masses were felt in the axilla, which were supposed to be enlarged glands, but turned out to be masses of cartilage.—See *Lucas Ward Book*, vol. vi, p. 325. Also account of case by W. H. Cripps, Esq., *Transactions of the Pathological Society*, vol. xxxi, 1880.

3262. Section of a very soft Cartilaginous Tumour, removed from below a woman's clavicle. The tumour is irregularly oval, lobed, from three to four inches in its diameters, invested (except at the surface of the section) with a thin fibro-cellular capsule. It consists of a very soft substance, which, when recent, was yellow and pale red, viscid and flickering, but is now nearly pure white, and floats out in the alcohol, like the flocculi of mucus. On microscopic examination, it yielded cartilage structures, and a peculiar filamentous tissue. XXXV. 101

The patient was 45 years old. Her mother died with hard cancer of the breast. This tumour had been increasing without pain for eight years, was sub-cutaneous and movable. Another tumour, probably of the same nature, was fixed to the right frontal eminence. In the six months following the operation, she had no return of disease; neither did the tumour on the forehead increase.

The case is related, and drawings of the microscopic structures are engraved, in Sir James Paget's "Lectures on Pathology," Third Edition, p. 511.

Presented by Mr. Edward Bickersteth.

3263. A large oval Tumour, composed of a uniform, pale, and very dense

substance glistening like cartilage. It was removed from the posterior mediastinum. XXXV. 2

FIBROUS AND FIBRO-CELLULAR TUMOURS—FIBROMATA.

3264. The Lobules of the Ears of a young woman. Within each lobule there is a nearly spherical fibrous tumour, over which the integument is tightly stretched. A section of one of the tumours displays a dense pale fibrous texture. Above these is a small tumour of the same kind, which was reproduced in the cicatrix formed after the excision of one of the lobules. XXXV. 24

The tumours began to grow shortly after the patient took to wearing ear-rings. The tumour last-mentioned was removed a few months after its first appearance.

Presented by J. H. Holberton, Esq.

3265. Two fibrous Tumours which grew in the lobules of the ears of a young woman who had worn ear-rings.

They were removed about two years after the ears had been pierced.

3266. Two Tumours of a fibrous structure, removed from the lobules of the ear of a woman, aged 25 years, where they had grown from the time that the lobules had been perforated for ear-rings.

3267. Portion of Skin, showing an oval raised growth, composed of tough fibrous tissue, like cicatricial tissue, which formed in the scar of a burn. XI. 32

3268. A dense fibrous Tumour, removed from the front surface of the thigh, where it lay imbedded in the rectus of a woman, aged 23 years.

It had existed twelve years.

3269. Section of a Foot and of a large fibrous Tumour, which occupies nearly the whole of the sole, and is attached to the periosteum of the bones of the tarsus and metatarsus. It consists of a very firm, pale, yellowish substance, intersected by wavy white fibres and bands. XXXV. 9

The tumour was removed from a nobleman, 35 years old. An enlargement of the sole had been observed thirty years. Numerous unsuccessful attempts were made by Mr. Pott, Mr. Hunter, and others, to reduce its size. Its great weight and the pain attendant on the latter periods of its growth at length induced the patient to submit to its removal. Amputation of the foot was performed by Mr. Langstaff, and the patient recovered. The other half of the foot is in the Museum of the Royal College of Surgeons of England.

Presented by George Langstaff, Esq.

3270. A "painful subcutaneous Tumour," removed from the outer side of the ankle of a young woman. It is of cartilaginous hardness, and was found on microscopic examination to consist entirely of fibrous tissue, arranged in irregularly interlacing fasciculi. Its presence occasioned considerable pain.

Microscopic specimens are preserved, No. 160.

3271. Portion of Skin from a Leg. A small circumscribed oval tumour is imbedded in the subcutaneous fat, and is fixed to the inner surface of the cutis. It is composed of a pale, greyish, glistening substance, intersected by white lines. The surrounding tissues appear healthy. XI. 30

It was removed from a middle-aged woman, and had been the seat of very great pain.

3272. A similar specimen. XI. 31

Removed after death from the leg of a young woman.

3273. A Tumour, which was removed from the lumbar region of a man, aged 50, in whom it had existed for three years. It lay upon the posterior part of the

ilium immediately under the skin, but not connected with it. It presented the character of a painful subcutaneous tumour, being exquisitely sensitive to the slightest touch. When divided it had the aspect of a fibrous tumour. It consists of fibrous tissue. XXXV. 122

3274. A firm Tumour, having the appearance and consistence of fibro-cartilage, which was removed from the right side of the floor of the mouth.

It consisted microscopically of very dense well-formed fibrous tissue; no trace of spindle-cells was observed.

From a man, aged 48 years. The tumour had been growing for fourteen years, and for some time he had lost sensation in the lower lip. It was mistaken for a salivary calculus. The growth recurred soon after removal, and the patient died from the extension of the disease.—See *Henry Ward Book*, vol. vii, p. 20.

3275. A Tumour, removed from the back of a man, aged 56 years, where it had been growing for twenty-five years. The greater portion of its substance is composed of fibrous tissue; but it was very vascular and contained numerous large and freely communicating blood-vessels. When recent its section presented a reddish colour.

3276. A lobulated, turgid-looking, painless Tumour, about three and a half inches long, involving the skin of the front of the thigh. The section is soft, translucent, and homogeneous. The under surface of the growth is also lobulated and distinctly separated from the subcutaneous tissue, the tumour apparently originating in the corium.

Microscopically it consisted of loose reticular connective tissue, generally well developed, but in places containing many nuclei.

The tumour was removed from the upper third of the thigh of a young lady, aged 19 years, It had existed thirteen or fourteen years, and first appeared as a small stain like a nævus. Its growth was at first very slow, but rapid during the last year. A microscopic section is preserved, No. 161.

Presented by Thomas Smith, Esq.

3277. Section of a Tumour, with a portion of Skin, removed from the front of the abdomen. The tumour consists of a uniform pale firm substance, which contained a large quantity of highly albuminous fluid. XXXV. 20

3278. A Tumour removed from the front of the thigh. It was very loosely imbedded in the tissue between the vastus internus muscle and the femur. A complete membranous sac invests it. Before its immersion in spirit it had a yellow colour. It consists throughout of a firm yellowish substance, closely intersected by tough white bands. Its chemical composition was chiefly albumen, with a very small proportion of oily matter. XXXV. 33

The patient was a man, 59 years old. The tumour had grown slowly. He died shortly after the operation, and no similar disease was found in any other part of his body.

3279. A pedunculated Tumour, composed of soft fibrous tissue, the meshes of which contained serous fluid.

3280. A pedunculated fibro-cellular Tumour, removed from the lumbar region of a man, aged 54. XI. 53

The tumour had been growing for about fourteen years, and had very gradually increased until two or three weeks before removal, when it was said to have increased much more rapidly.

For a drawing of the tumour, see No. 552.

3281. Section of a small fibro-cellular Tumour, attached by a long pedicle to the skin of the axilla. APPENDIX. 1

3282. Sections of a Tumour, removed from the front of a man's abdomen. It was covered by thin vascular skin, and was nearly pendulous. It has a somewhat oval form, and measures from an inch and a half to two inches in its

several diameters: its surface is slightly nodulated. Its texture is uniformly firm, compact, pale, with an obscurely fibrous appearance, and with many minute cysts imbedded in it, which contained a yellow fluid: it is invested by a thin capsule. With the microscope it appeared to be composed of fine fibro-cellular tissue, interwoven among minute, pale corpuscles, and containing no fat. XXXV. 44

The patient was 28 years old. He had no return of the disease.

3283. A Fibroma (false neuroma), which was removed from the sheath of the ulnar nerve. The tumour is about four inches long and two and a half broad. The surface is smooth and undulating; attached to one extremity is a partially-detached lobule. It is composed of a soft, white, homogeneous, almost semi-gelatinous substance. Microscopic examination showed a delicate fibrous tissue formed of wavy bands, containing abundant small round and spindle-shaped nuclei.

The tumour was removed from the axilla of a gentleman, aged 60. It lay in a capsule connected with the sheath of the ulna nerve. It had been growing for nineteen years. Some numbness of the ring and little fingers existed immediately after the operation, but ultimately passed off.

A microscopical specimen is preserved, No. 162.

Presented by T. Smith, Esq.

3284. An anterior Crural Nerve from a Stump. The extremity of the nerve forms a hard bulbous swelling, into which the section of the nerve shows that its component fasciculi are continued. VIII. 2

FIBROUS TUMOURS CONTAINING CARTILAGE AND BONE.

3285. Part of a fibro-cellular Tumour, removed from a thigh. A portion of this tumour is invested with a thin layer of cancellous bone, and small nodules of cartilage are placed in one of the partitions between its lobes. It appears now white, compact, and tough; but, in the recent state, looked almost gelatinous, through the quantity of greenish-yellow serous fluid infiltrated in its texture. XXXV. 72

The patient was a man, 38 years old. The tumour had been observed about five months, and lay beneath the tensor vaginæ femoris, loosely connected with the surrounding parts. There was no recurrence of the disease within three years of the operation.

A drawing of the tumour is preserved, No. 550.

3286. Section of a similar Tumour, removed, with the skin covering it, from the sole of a foot, with which it was connected by a comparatively narrow base. Its lobes are very distinct; it was imbedded in the subcutaneous tissue over the metatarsal bones, and some of its smaller lobes extended among the deeper-seated parts. Nodules of cartilage are set in the pliant fibro-cellular tissue of which it is composed, and which, in the recent state, was infiltrated with fluid. XXXV. 75

It was of eight years' growth, in a man 41 years old.

3287. Section of a small Tumour, of the same kind, which is completely encased in a thin layer of bone. XXXV. 74

It was removed from over the upper part of the saphena vein of a girl, and was of slow growth.

MYXOMATA (Myxo-Sarcomata).

3288. A portion of a Tumour of the Breast. The section shows a soft, glistening tissue, with occasional loculi, into which solid growths project.

The tumour was found, on microscopic examination, to consist of mucous and embryonic connective tissue, containing tubules and loculi of new-formed gland tissue (myxo-adenoma).

It was removed from a woman, aged 44 years, and had been growing fourteen years; very rapidly during the last three months. The tumour was very hard, but neither adherent to the skin nor deeper tissues.—See *Lucas Ward Book*, vol. vii, p. 34.

3288a. An oval Tumour of the Mammary Gland, having a very distinct capsule, which forms around the tumour a number of intercommunicating cyst cavities, filled with soft proliferous nodules. The section shows a softish, somewhat gelatinous, yellowish-white tissue, containing loculi filled by one or more proliferous nodules.

Microscopic Examination.—The substance of the tumour consists of soft spindle and round-cell sarcoma tissue, intermixed with mucous tissue, and the intra-cystic growths for the most part of mucous tissue. The growth was removed from a lady, who had previously had two tumours removed from the same situation.

Microscopic sections are preserved, No. 144.

Presented by T. Smith, Esq.

FIBRO-MUSCULAR TUMOURS—MYOMATA.

UNSTRIPED FIBRO-MYOMATA.

3289. A Uterus, with a large Fibroid attached to the left side of the fundus. The section shows that it is composed of interlacing bundles of, apparently, fibrous tissue.—See *Post Mortem Book*, vol. viii, p. 157.

3290. A Uterus, with several large and small Fibroids attached to it, and so completely surrounding it, that the fundus is indistinguishable. The cervix is at the upper part of the specimen, and a portion of glass is inserted into the os uteri. The large fibroid at the lower part of the specimen, through which a section has been made, has undergone calcification, and is of bony consistence.

From a patient, who died of intestinal obstruction, produced through strangulation of the intestine by some adhesions between it and the uterine fibroids.—See *Post Mortem Book*, vol. viii.

3291. A Bladder with the Prostate Gland enlarged and indurated. The chief enlargement is at the sides and anterior part of the gland; but it is irregular, so that the prostatic portion of the urethra is not only flattened, but is also turned from its regular direction by portions of the gland projecting into it. The section shows that the gland is composed of a closely textured tissue, in which small round masses or nodules lie encapsuled. XXIX. 2

CALCIFICATION OF FIBRO-MYOMATA.

3292. A portion of a Uterine Fibroid, which has undergone calcification at the circumference, and also to some extent in its interior.

3293. An Oval Tumour, about the size of a hen's egg, composed almost entirely of calcareous matter lying within a soft fleshy substance, and of bony hardness.

The microscope shows that the fleshy substance is composed of fibrous tissue, within which a considerable amount of involuntary muscular fibre in bands and patches is seen.

The tumour was found lying loose in the abdominal cavity of an old woman, brought to the Hospital for dissection.

The histological characters suggest, that it was a pedunculated sub-peritoneal fibroid of the uterus which had become detached.

STRIPED-MYOMA.

3293a. Section of a Tumour composed of Striped Muscle and round-cell Tissue, removed from the right lumbar region. It is seven inches and a half long, and four inches and a half wide; of uniform firm consistence and yellowish-white colour; its section presents the appearance of interlacing fasciculi of fibrous tissues, and in places small cysts are cut across. In the upper part of the

bottle the right kidney is suspended with which the tumour was in contact. The organ appears healthy, but presents on its anterior surface a concavity, over which the parenchyma is exposed, apparently by the pressure of the tumour.

In histological structure, the tumour consists of striped muscle fibre for the most part arranged in fasciculi; and nodules of round-cell tissue are scattered throughout it. The individual muscle fibres are long, very narrow, distinctly striated, but the sarcolemma is indistinguishable.

The specimen was taken from the body of a child, aged 15 months, who came under treatment for a swelling in the right flank, which was soft, semi-fluctuating, and about the size of a hen's egg. This tumour grew rapidly, and its increase in size was attended with loss of strength and disturbance of the digestive organs, until at last the respiratory apparatus was encroached upon. Death took place from collapse. For a further account of the case see a paper by Mr. Eve in the *Transactions of the Pathological Society*, 1881.

Presented by E. A. Brickwell, Esq.

SARCOMATA.

ROUND-CELL SARCOMA.

3294. Half of a round-cell Sarcoma, from the back of a boy, aged 11 years, who had other similar tumours on different parts of the body; one higher up on the back; a second over one hip; a third on the front of the chest; and a tumour of each testicle. Two tumours had been previously removed from the forehead, and one from the parotid region; these had existed about three years. The tumours followed each other slowly at first, but more rapidly later.

In microscopic characters all the tumours, which were removed, precisely resembled each other, including the tumours of the testes. They consisted of round cells in a fine fibrous stroma, which was much more abundant than is usual in the sarcomata.

See an account of the case by Mr. Butlin, in the *Transactions of the Pathological Society*, vol. xxx, p. 396, 1879, and *Colston Ward Book*, vol. v, p. 178; also *Pitcairn Ward Book*, vol. v, p. 49.

A microscopic specimen of the tumour of the testicle is preserved, No. 121.

3295. Section of the lower end of a Femur. The extremity of the diaphysis is surrounded for about four inches by a sarcomatous tumour, which projects especially on the posterior surface. The tumour is almost entirely ossified and contains a few small cysts. The entire thickness of the femur was surrounded by the new growth; the bone is condensed and indurated, but does not appear infiltrated.

The histological elements of the tumour are round and elongated cells.

The specimen was taken from a young man, aged 16 years, by amputation through the thigh. Four months before admission to the Hospital he noticed a swelling above the left knee, which arose spontaneously. It gradually increased in size, accompanied by aching pain. —See *Kenton Ward Book*, vol. vii, p. 33.

3296. Sections of two Tumours. The largest tumour occupied the situation of the mammary gland: it is an oval mass, with a smooth external surface, and formed of a pale, uniformly firm substance. The smaller tumour seemed to be formed by enlargement and change of structure of the axillary lymphatic glands. It consists of the same kind of substance, but presented a distinct portion of a dark brown colour and of a very soft texture, like a mass of medullary substance with blood effused in it. The tumour was a round-celled sarcoma, having some resemblance to the lympho-sarcomata. XXXIV. 9

From a girl 16 years old.

Microscopic sections are preserved, No. 163.

GLIOMA (Glio-Sarcoma).

3297. A Glioma of the Retina. A vertical section through the optic nerve and eyeball shows a firm growth of a white colour, commencing at the entrance of

the optic nerve, and filling the greater portion of the inferior two-thirds of the vitreous chamber, the remaining third being filled with recent flocculent lymph. The growth consists of two lobes, in distinct portions, the smaller and posterior of these springing from the entrance of the optic nerve has driven the choroid before it, and perforating this has spread out into the vitreous chamber as far forward as the posterior aspect of the lens. No trace of the retina remains. The lens was in its normal position, but has been lost. IX. 60

The eye was removed from a boy, aged 10 years. The disease had not attracted attention until seven weeks previous to the operation.

LYMPHO-SARCOMA.

3298. Section of a soft brain-like Tumour, occupying the popliteal space. It is firmly attached to the posterior ligament of the knee-joint, and infiltrates the substance of the hamstring muscles, but is not connected with the bones.

The growth consists of very small closely-packed round cells, enclosed by trabeculæ of a delicate connective tissue, having a more or less alveolar arrangement. The cells were about the size of white blood or lymph corpuscles.

From a lad, aged 17 years, who was admitted to the Hospital with an elastic swelling in the popliteal space, which in its physical characters resembled a bursa. On puncture it was found to be a solid tumour, the size of a plover's egg, having the same characters as the above, and attached to the posterior ligament of the knee-joint. The tumour was removed, the wound healed, and the patient left the Hospital, but returned two months after the operation with a recurrence of the growth and ulceration of the skin covering it. Amputation through the middle of the thigh was then performed. He died with a return of the disease in the pelvic and lumbar glands, a few months after the operation. The infiltrated glands were white, soft, and brain-like, and the microscopic characters of the growth exactly resembled that of the primary and recurrent tumours.—See *Harley Ward Book*, vol. vii, p. 22.

Microscopic sections are preserved, Nos. 166, 167.

SPINDLE-CELL SARCOMA (Recurring Fibroid, Fibro-Plastic Tumours, &c.).

3299. Section of a "recurring fibroid" Tumour (spindle-cell Sarcoma) removed from over a patella. It is many-lobed, and its lobes are separated by connective tissue, continuous with that which invests its whole mass. Its substance is soft, uniform, close, without apparent texture; it appears now opaque, nearly white, dimly shaded, brain-like; but, in the recent state, was greyish and translucent, flickering like firm gelatine. Blotches of extravasated blood appear on parts of its cut surface. XXXV. 64

The patient was a healthy-looking man, 23 years old, and this was the third tumour of the kind removed from the same part. The first, which had been a year in progress, was removed in August, 1851; three months afterwards a second tumour appeared, which grew very quickly, and was removed in March, 1852; and two months after the healing of this second wound, this third tumour began to grow, and after seventeen months' growth was removed in November, 1853.

The microscopic constituents of the growths were, a dimly-granular basis, or blastema, in which were imbedded abundant, large, clear nuclei, with nucleoli, and elongated spindle cells, with nuclei similar to those that were free.

A drawing of the specimen, in its recent state, is preserved, No. 56. A fourth tumour, of the same kind and size, was removed in August, 1854, a fifth in April, 1855.

3300. Part of a "recurring fibroid" Tumour (spindle-cell Sarcoma), removed after death from the front of a chest. It is composed of many loosely-connected lobes. In the recent state, it was described as of hard texture, like a fibrous tumour, yielding very little blood when cut into, but showing on its section the mouths of open vessels. After the action of spirit, it is milk-white, firm, elastic, close-textured, breaking with a coarse, fibrous grain. XXXV. 80

In 1839, a tumour, which had been growing for a year over his right first rib, was removed from the patient from whom this specimen was taken. He was at the time 48 years old. Two years after the operation another tumour appeared in or near the same part and was removed in 1843. A third was removed in 1847, a fourth in 1849, and a fifth in 1851. After each of the first four operations the patient recovered well, and had an interval of apparent freedom from disease. After the fifth, the wound had scarcely healed when two tumours

appeared beneath the scar, which were just like the preceding ones, except that they grew more rapidly. One of them was so fixed to the clavicle, that no operation could be advised. They coalesced, and continued to grow till, at the time of the patient's death, in 1852, twelve months from their first appearance, they made a mass more than a foot in diameter. In the course of their growth, the skin over them ulcerated widely; portions of them also sloughed away, and sometimes severe hæmorrhage ensued. Still, with the exception of being reduced by the bleeding and discharge, the patient's health was not deeply affected; he did not become cachectic; he had no sign of internal disease; and he seemed to die through mere exhaustion.

In microscopic structure, the tumour appeared almost wholly composed of elongated, slender, nucleated cells, and nuclei of similar shape. A sketch of some of these, with a further history of the case, is given in Sir J. Paget's "Lectures on Pathology," Third Edition, p. 602.

Presented by Dr. Ross.

3301. Section of part of a Leg, showing a large recurring fibroid Tumour (spindle-cell Sarcoma), imbedded in the muscles and protruding through the skin. The tumour, irregularly spheroidal, and lobed, is partly intersected by the fascia of the leg; and above, at a part where an operation had been performed, appears confused with the muscles. In other parts its boundary is clear. Its protruding and cut surfaces appear soft, broken, grumous, and pale brown; in the recent state its cut surface was milk-white, and brain-like, except where it was discoloured by effused blood. XXXV. 97

The patient was a man 60 years old. Within the five years preceding the amputation of his leg three tumours were removed from the part from which the tumour here shown proceeded. They all had the general appearance of fibrous tumours; but microscopic examination of the last of them showed that it was chiefly composed (as, probably, the two preceding also were) of very narrow, elongated, caudate, and oat-shaped nucleated cells. The tumour here shown, though brain-like to the naked eye, had, essentially, the same microscopic structure. It was two and a-half years in progress, and amputation of the limb was made necessary by profuse hæmorrhages from its protruding part.

The parts, in their recent state, are shown in two drawings, Nos. 562, 563; and there is a further history of the case, with sketches of the minute structures of the tumours, in Sir J. Paget's "Lectures on Pathology," Third Edition, p. 598.

3302. Part of a "fibro-nucleated" Tumour (small spindle-cell Sarcoma), removed with the surrounding integuments from a boy's fore-arm. The tumour is unequally lobed, widely out-spread between the skin and fascia, and intimately adherent to both, though distinct and separable from them. Its section is now opaque-white and brain-like; but, in the recent state, it was smooth and shining, of stone-grey colour shaded with tints of yellow. Its texture was firm, with no distinct fibrous or other arrangement, but easily breaking and splitting in layers. The skin covering the tumour is very thin, tense, and partly ulcerated; and cord-like, branching processes, extend outwards from it, like the puckerings of a scar. XXXV. 81

The patient was 10 years old. When he was two years of age, he received a slight wound of the fore-arm. A tumour appeared soon afterwards, increased, and was removed after two years' growth. Before the wound healed, the tumour here shown began to grow; it increased at first slowly, but afterwards more quickly. In the operation for its removal, it was necessary to take away much of the fascia of the fore-arm and of the intermuscular septa, to which its base was closely adherent. There was no return of disease for nearly three years after the operation.

A drawing (No. 587) shows the appearance of the disease before the operation; and one of its microscopic structure, which consisted chiefly of nuclei, arranged in overlying rows in a molecular basis, is published in Sir J. Paget's "Lectures on Pathology," Third Edition, p. 607.

3303. A Tumour, with the portion of skin to which it was adherent, removed from the groin of a stout old lady. It is about the size of a hen's egg, of a pale pinkish colour, gelatinous aspect, and firm consistence. The skin covering it is thin, and at one point there is an ulceration about the size of a sixpence: the skin around the ulceration is thinned but not infiltrated. On the outer side of the tumour the skin is infiltrated and raised into a tubercular prominence.

The tumour had been growing for ten years ; there were no enlarged glands.

Microscopic Examination.—The growth is composed of small spindle-cells, intermixed abundantly in places with round cells. Round cells darkly stained are abundant around the vessels, which have no proper walls. In places a transition of round cells into spindle-cells appears to be going on, and again of spindle-cells into fibrous tissue.

Microscopic sections are preserved, No. 168.

3304. Section of a Foot, showing a "recurring fibroid" Tumour (spindle-cell Sarcoma), occupying the whole of the sole. The patient was a healthy looking woman, aged 30 years. A similar but smaller tumour had been removed three times previously from the sole, at intervals of about a year between each removal. The lymphatic glands were not affected. No recurrence had taken place two years after the removal of the foot.

3305. A Fibro-Sarcomatous Tumour, which grew from the buttock. Its outer surface is largely nodulated ; the section presents a reticulation of glistening fibres having a cartilaginous lustre. The tumour was not connected with bone.

It consisted microscopically of a matrix of fibrous tissue and spindle-cells enclosing round nuclei.

The tumour was removed by operation from a lady, aged 58 years. Three years previously a similar growth had been removed from the same situation.

Presented by A. Willett, Esq.

3305a. A Fore-Arm and Hand. The lower extremities of the bones of the forearm, and the bones of the carpus, are surrounded by a lobed and ulcerated mass of soft sarcoma. The interior of the bones appears healthy. XXXV. 8

Microscopic Examination.—The growth consists of large spindle-cells.

3306. Section of a flattened oval Tumour, removed from beneath the integuments of a woman's back. Its base was closely connected with the trapezius muscle, a portion of which was removed with it. The tumour is composed of four portions of unequal size, which are loosely connected by areolar tissue ; and on the cut surface of each portion there is an appearance of lobular arrangement. In texture, the tumour resembles the fibrous tumours of the uterus. In the portion of integument lying over the tumour is a large cicatrix, the result of an operation by which a tumour had been previously removed from the same part. XXXV. 52

The patient was an apparently healthy woman, between 50 and 60 years old. Nine months before the removal of this tumour, one, which had been growing for about sixteen months, was removed from the same part. This was growing rapidly, and with much pain ; the skin over it was very red, and the adjacent veins were large. There was profuse hæmorrhage at the time of the operation ; but the patient recovered from it, and seemed restored to health. The tumour yielded a large quantity of gelatine when boiled in water. The other half is in the Museum of the Royal College of Surgeons of England.

3307. A Tumour, with a portion of the muscles of the thigh in which it is imbedded. An elliptical piece of skin is connected with the tumour, in which there is a cicatrix, the result of a former operation for the removal of a morbid growth occupying the same situation. The tumour is of a firm homogeneous texture. In a cavity surrounded by condensed cellular tissue are two ligatures, with which arteries had been tied at the first operation. XXXV. 31

From a middle-aged man. The second operation was performed about two years after the first. The tumour had grown rapidly, and presented so malignant an appearance that little hope was entertained of the patient's recovery ; but he lived several years without any return of the disease.

3308. Portion (about one half) of a fibrous and spindle-cell sarcomatous Tumour which weighed 9 lbs. 4½ ozs. It was removed from the lumbar region of a man, aged 50 years, in December, 1869. The tumour recurred, and was removed in

November, 1870; a second recurrent growth was removed in June, 1871; and a third in November, 1871.

3309. A large Tumour, with the surrounding skin, removed from the front of the chest of a middle-aged lady. The section of the tumour shows that it is composed of a soft but compact, pure white, brain-like medullary substance, with blood diffused through its lower half. XXXV. 28

In the course of eleven years preceding the removal of this tumour, three similar operations had been performed on the same lady. At the first operation, the part removed appeared to be a simply hypertrophied mammary gland. At the second, a large tumour was removed from the opposite breast. At the third, a large tumour removed from the seat of one of the former operations, appeared to be partly fibrous, and partly medullary. At the fourth, the tumour above described was removed from the front of the sternum between the cicatrices of the other operations. The effusion of blood into the lower part of this tumour was the consequence of its being punctured. Profuse hæmorrhage occurred at the same time, and a large portion of the tumour, as the preparation shows, protruded through the wound.

3310. Sections of a Tumour, with the surrounding skin, removed from the same patient as the tumour last described, and from the situation of the cicatrices of the previous operation. The sections display the same medullary character as the preceding tumour presents, but the morbid substance is softer and more uniformly coloured with effused blood. XXXV. 29

During her recovery from this, the fifth operation, the patient died suddenly. A mass of fibrin mixed with cancerous matter was found in the pulmonary artery; the specimen is preserved in Series VIII, No. 1564.

3311. A Tumour, removed from the pectoral region of a young man, aged 22 years, where it had existed for fourteen months. It was situated immediately behind the left mammary gland but, as the section shows, the gland is not involved, but merely carried forward by the growth of the tumour behind it. The mass was very hard, circumscribed, and prominent, but the deeper part involved the lower border of the pectoralis major muscle, a portion of which was necessarily removed with the tumour. The fibres of the muscle may be traced up to the tumour, with which they are connected, but in passing into the substance of the tumour, their structure is lost. The tumour appears to be composed of fibrous tissue, strong bands of which intersect it irregularly in different directions. Some of the axillary glands were slightly enlarged.

MYELOID SARCOMA (Giant-Cell Sarcoma).

3312. Portion of a Lower Jaw, comprising one side of the bone from the angle to the symphisis, which was removed by operation from a young woman. A soft medullary growth, originating in the interior of the bone, has caused the expansion of its surrounding walls. In the upper half of the section, the morbid structure has been separated from the cavity in which it was imbedded. I. 208

Microscopically, the tumour consists of round and spindle cells in a scanty matrix of connective tissue, with myeloid cells.

3313. An Inferior Maxilla, upon which there are two nearly symmetrically placed tumours on either side of the symphisis, originating apparently within the substance of the bone. Their section is homogeneous, and of a pinkish grey colour.

The substance of the tumours is ossified throughout. They were found with the microscope to be myeloid sarcomata.

The bones in Nos. 289A, 289B, 289C, Series I, were taken from the same case.

MELANOTIC TUMOURS (Tumours containing Pigment).

3314. Sections of two Melanotic Tumours, which were removed from the walls of the abdomen. The lower tumour, consisting almost entirely of a soft black substance, occupied the situation of a nævus, and was removed by operation. The upper one, consisting of a pale brownish medullary substance, spotted with melanotic deposits, grew from the cicatrix formed after the removal of the other. XXXV. 18

The patient was a man, 59 years old. The first tumour seemed to have its origin in a mole, which had undergone no change from birth, till about a year before death. It then enlarged, became dark brown and firm, ulcerated superficially, and discharged fœtid ichorous fluid. It was removed, together with several small dark growths which formed around it, and the wound healed; but in six weeks the tumour was reproduced from the cicatrix, and other small growths again formed in and beneath the skin around it, and increased in number, till in two months they amounted to at least forty, and extended from one ilium to the other, "like a large bunch of dark coloured grapes." At the same time, other tumours appeared near a mole on the sternum, and on the sides and back of the trunk, the scalp and forehead. At length, gradually increasing dyspnœa and cough came on, and were followed by general dropsy, under which the patient sank within a year from the first increase of the mole. After death, numerous melanotic growths or deposits were found in the heart (a part of which is preserved in Series VII, No. 1288), in some of the bones, in the periosteum, the mesenteric glands, pancreas, liver, kidneys, and lungs.

The father of this patient died with numerous small tumours between the shoulders; and his children and brothers, as well as his father, had many moles on various parts of their bodies.

A further account of the case is given by Dr. Norris, in the *Transactions of the Provincial Medical and Surgical Association*, vol. iv, p. 437. London, 1836.

Presented by Dr. Norris.

3315. Section of a Tumour, which was removed from the back of a young woman. The exterior of the tumour is lobulated, and its margin projects far beyond its base of attachment. Its surface is covered, apparently, by a thin layer of indurated skin. Its interior consists of a moderately firm, and obscurely fibrous substance, incompletely partitioned into small round masses or lobes, and is in some situations of a dark brown, in others of a black colour. At the base of the tumour, the subcutaneous fat presents small isolated portions of melanotic substance; and many others were dispersed in the cellular tissue for some distance around. The vessels supplying this tumour were large, and bled profusely in the operation. XXXV. 23

The patient was a woman between 20 and 30 years old. The tumour had its origin in a mole or dark nævus, but had not grown rapidly till shortly before it was removed. About two years after the operation, she died with melanotic deposits in nearly every organ. The bones in Series I, Nos. 473 to 475; the dura mater, Series XXX, No. 2467; the portion of liver, Series XXI, No. 2213; the ovaries, Series XLI, No. 2928, and the mammary gland, Series XLVIII, No. 3183, were taken from the same body.

3316. Section of a Melanotic Tumour removed from a man's chest. The mass, imbedded in the subcutaneous tissue, is of oval shape, measuring from one and a half to three-quarters of an inch in its diameters. It is moderately firm, and lobed; in every part, deep brown shaded with black. In the fat over it are two small separate black spots, but the rest of the adjacent tissues appear healthy. XXXV. 108

The patient was about 60 years old. Five years before the appearance of this tumour, a mole which he had on his sternum increased considerably, and was removed by ligature. Nine months after its removal, this tumour appeared, and increased gradually, and without pain. It was excised when it seemed likely to ulcerate. Six months afterwards, it was necessary to remove another tumour from near the same part; and after this operation, the patient remained well for at least eighteen months.

The specimen is represented in a diagram, No. 360.

Presented by George Bullen, Esq.

3317. Section of a Melanotic Tumour, removed from a female, aged 31 years. There had always been a mole in the site of the tumour, but it began to grow only two years before removal, and fourteen months later it became warty and lobulated on the surface.

3318. Section of a Melanotic Medullary Tumour, seated in a portion of the skin and subcutaneous tissue of the abdomen. The growth of the tumour commenced beneath a mole, or pigmentary nævus, traces of which appear in the darkly-shaded skin which is stretched over its surface. The cancerous mass is well defined, lenticular in shape, and lobed; its cut surface is smooth, close-textured, and moderately firm. The greater part of it appears nearly pure white, and was when recent only faintly shaded with brown; the rest of its substance is more or less deeply brown or black, through the abundance of black pigment in the cancer structures, or in granules mingled with them. XXXV. 102

The patient was 44 years old. Where the tumour grew, near the umbilicus, there had been a mole from the time of birth; but the growth had been observed for only five months. In the week after the removal of this tumour another appeared in the left breast, and in five months she died with similar tumours in nearly every organ.

No. 572 is a drawing and No. 361A diagram of this specimen.

GLANDULAR TUMOURS—ADENOMATA.

3319. A small Tumour removed from the breast. It has the external form and appearance of a fibro-adenoma. Its substance is tough, elastic, nearly opaque-white, appearing obscurely and very closely filamentous. There is a small smooth-walled cavity in its centre; and it is incompletely partitioned. XXXIV. 23

The tumour consists microscopically of new-formed gland tissue, in the form of tubules and acini, imbedded in a large amount of fibrous tissue.

From a married lady, 36 years old, in whom it had grown slowly, and almost without pain, for four years.

A drawing of the microscopic appearances of the tumour is preserved, A 37.

3320. A small oval Tumour, having externally the appearance of a fatty tumour. It was infiltrated with calcareous material to such an extent that it could not be cut with a knife.

Microscopically it is composed of convoluted columns of very small epithelial cells. Some of the larger columns contain a central space filled with granular material and having the appearance of the lumen of a tubular gland with a thick wall of epithelium. The tumour is probably an adenoma of a sebaceous gland.

The tumour was removed from the subcutaneous tissue of the back of a young man. It had been growing for six years. His brother, his father, and a paternal aunt had subcutaneous tumours of the same description.

Microscopic specimens are preserved, No. 169.

WARTS.—PAPILLOMATA.

3321. A mass of Warts, removed from the skin around the anus. XI. 9

3322. A soft, papillomatous, pigmented Growth, removed from the right side of the thorax of a girl aged 13 years. It grew in the situation of a congenital mole, and during the last two years it had increased in size very rapidly.

Microscopic examination showed papillæ projecting from the surface, covered with a thick layer of cuticle: there was also a slight ingrowth of epithelium from the deep stratum of the rete Malphigii into the tissue at the base of the growth, which consisted almost entirely of small, round, indifferent cells.

Microscopic sections are preserved, No. 170.

Presented by C. B. Gabb, Esq.

3323. A Growth springing from the skin and composed of ruddy, nodular, foliaceous papillæ. The subjacent cutaneous tissue appeared infiltrated.

Microscopically the papillæ consist of round-celled tissue continuous with the corium, but which does not extend to any considerable depth into it. They are covered with epithelium, the lower layers of which are columnar.

The growth was removed from the back of a young woman aged 22 years. It grew from a small warty growth which existed at birth. Seven years before admission to the hospital caustic was applied to the growth, because it had become raw and painful. It subsequently grew more rapidly.—See *President Ward Book*, vol. vii, p. 15.

Microscopic sections are preserved, No. 171.

3324. A flat, finely nodulated, sessile warty Growth, which was removed from the perineum of a gentleman, aged 35 years. He had resided in hot climates, and attributed its formation to the sweating and friction of garments, which sometimes caused intense irritation. It had been growing three years before removal.

Microscopic examination showed, in addition to an increase of superficial epithelium, a considerable ingrowth from the deep stratum of the rete Malphigii in the form of papillary processes, containing in places "cell-nests." The growth, in fact, appeared to be in transition to epithelioma.

Microscopic sections are preserved, No. 173.

Presented by T. Smith, Esq.

CANCERS, CARCINOMATA.

EPITHELIAL CANCER, EPITHELIOMA.

3325. An Epithelioma on the under surface of the heel, an inch and a half by two inches in diameter. The surface is hard, fissured, and covered by warty papillæ; the edges are raised by thickening of the epidermis. The growth extends upwards on the inner side, and here the papillæ covering the base are smaller and softer. A section shows that the base of the ulcer is formed by a softish medullary substance, which extends downwards as far as the bone and considerably beyond the edges of the growth.

Examination with the microscope showed that the growth was an epithelioma. Numerous columns of cornified epithelium extended from the surface deeply into the growth.

Removed by amputation from a man, aged 56 years. Eight years before admission to the Hospital he noticed a hard corn on the left heel, which he used to have cut every week. After a time the corn began to grow and two years ago it was removed, but recurred, and six months before admission the growth was again removed with the same result. The femoral glands were not enlarged.—See *Darker Ward Book*, vol. vi, p. 395.

Microscopic sections are preserved, Nos. 174, 175.

3326. Sections of an Epithelioma, removed from a chimney-sweeper's neck. It forms a nearly regular conical mass, rising half an inch above the level of the surrounding skin, and covered with a laminated black scab. It bore much resemblance to a patch of rupia, except in that its base measured less than its height. Its substance within the scab is soft, friable, with mingled tints of pale brown and white. Its base rests on the subcutaneous tissue. XXXV. 99

The patient was 30 years old, and had been a sweep for twenty-seven years. The disease had existed for nine weeks. He recovered quickly from the operation and returned to his occupation, but a year later had epithelial cancer of the scrotum. This also was removed, and he remained free from disease for at least two and a half years.

3327. A Hand, with part of the Fore-arm, removed on account of a growth covering nearly half the surface of the skin. The growth is warty, very vascular, superficially ulcerated, with an everted sinuous margin. It bears a close resemblance to an ulcerated cancer of the scrotum in chimney-sweepers.

XI. 6

The patient was 49 years old. Five years before the amputation of his hand he was employed

as a gardener in strewing soot over the ground for several mornings in succession; a warty growth then formed, and it increased and ulcerated in the spring of both the two following years while he was similarly employed. After this, though he was no longer in contact with soot, the disease increased till it was removed. After the operation he completely recovered. The case is related by Sir James Earle, in his edition of Mr. Pott's works. London, 1808, vol. iii, p. 183.

3328. Sections of a Tibia, and of the muscles and integuments covering its anterior part. The lower portion exhibits part of a firm epitheliomatous ulcer, with exuberant granulations and a somewhat elevated, sinuous border, which is situated directly over a united fracture of the tibia. The upper portion, which is a transverse section of the front of the leg, shows that the cancerous disease extends from the skin through the muscles and other deeper tissues to the surface of the bone; all these parts being converted into a dense, semi-transparent substance, with obscure traces of fibres radiating towards the surface. XXXV. 40

The patient was a man, 50 years old. When four years old, he broke his leg, and a portion of bone separated before the fracture united. The integuments over the fracture remained hard and occasionally painful till five years and a half before the amputation of the limb, when he had a blow on the diseased spot, which was followed by ulceration, and the growth of the morbid structure shown in the preparation. The case is published by Mr. Ormerod, in his *Clinical Collections*, p. 55. London, 1845.

3329. A large Growth, removed from the scalp of an old woman. It forms an irregularly oval mass, about five inches in its chief diameter, knobbed on its external surface, and consisting of a compact but soft and friable substance, imperfectly lobed, and presenting no appearance of definite texture. Its surface is rough, as if the mass were superficially ulcerated: its border overhangs to a considerable distance the integuments through which it has protruded. By its side is a cyst half an inch in diameter filled with soft, grumous, yellowish substance, like the ordinary contents of cutaneous cysts in the scalp. XXXV. 57

The patient was 80 years old. Both she and three of her children had numerous cysts, like wens, in the scalp. Two years and a half before her death one of these cysts, which had not previously appeared different from the rest, inflamed. It was opened, and sebaceous matter was discharged from it. The opening made into it did not heal, but ulcerated, and a small hard lump remained under the ulcer for a year, when, after erysipelas of the head, it began to grow and rather quickly increased to that shown in the preparation. Portions of its surface frequently sloughed, and occasionally it bled largely.

Presented by James Reid, Esq.

HARD OR SCIRRHOUS CANCER.

3330. A Breast in which a hard Cancer is situated in the part of the mammary gland near the axilla. The disease forms a small, nearly globular mass, presenting, though less distinctly, the same characters as the preceding specimen. Above the breast, two lymphatic glands are suspended, which were removed from the axilla; they are indurated, and parts of their substance have the appearance of cancer. XXXIV. 15

From a woman 30 years old.

SOFT OR MEDULLARY CANCER.

3331. Cancerous Growths, removed, with the adjacent textures, from an axilla. The principal growth filled the hollow of the axilla, and projected over its borders; smaller growths lie near the edges of this larger one. All the growths are raised above the surface of the skin, presenting rounded or lobed surfaces, which in the recent state were florid and very vascular, like those of granulations. The bases of most of them are narrowed; those of the smaller growths are set in the superficial part of the cutis; those of the larger extend more deeply, and are confused with a cluster of cancerous axillary lymphatic glands. A section of one side of the larger growth shows that it is composed of a soft, loose-textured, pinkish-white substance, which, in the recent state, yielded, upon

pressure, a whitish, turbid fluid, containing cancer-cells with characters intermediate between those of medullary and of epithelial cancer. XXXV. 65

The patient was a woman between 50 and 60 years old. This disease had been in progress about eighteen months. Her whole body was covered with small, pedunculated, cutaneous growths (Molluscum simplex), and the skin of the nates was, on both sides, overgrown, so as to form a great cushion-like mass. The affection of the skin had existed about thirty years, but of late years had scarcely increased. The smaller cancerous masses, shown in the specimen, had their origin, the patient believed, in some of the molluscous growths; not so the large mass. She recovered from the operation of removing the disease.

Drawings Nos. 471 and 583 show the appearances, during life, of both the cancerous disease and the molluscum.

3332. Section of a Tumour and of the part of the abdominal walls in which it grew. The tumour, of nearly spherical shape, is seated in the thick layer of subcutaneous fat, with the skin stretched, thinned, and superficially ulcerated over it. It is perfectly circumscribed, and is composed of a pale, soft, cancerous substance, in which are numerous smoothly-lined cysts that contained blood or blood-coloured fluid. The tumour is from two and a half to three inches in diameter; the cysts from one to four lines in diameter. XXXV. 100

The patient was 62 years old. The tumour had been about five months in progress, and its growth had commenced about four months after the removal of two tumours from the same part. These tumours had been growing for seven months, and made up a larger mass than this. Seven months after the second operation another tumour, apparently of the same kind, began its growth in the scar.

The microscopic structures of the tumour had the characters of medullary cancer.

3333. Section of a Great Toe, and of a Tumour closely surrounding, but not apparently springing from, the last phalanx. The tumour forms a large, irregularly oval mass, of which the greater part of the surface, exposed by ulceration of the integuments, is covered by coarse wart-like granulations, and a thin layer of either greyish lymph or slough. Except at its surface, which is rather softer, the whole tumour consists of a firm, rough, elastic substance of uniform close texture, pink and white, vascular. Most parts of the tumour, also, have an obscurely fibrous appearance, as if fibres radiated from its base towards its surface. The margins of the portion of the tumour which is exposed and ulcerated are sinuous, and overhang the skin through which it protrudes; while the skin itself is thickened, everted, and closely adapted to the margins of the protrusion. XXXV. 54

The patient was a man 43 years old. The disease commenced four years before the removal of the foot, when the toe-nail spontaneously fell off. Successive desquamations of cuticle from the bed of the nail, with ichorous discharge, occurred for a year and a half, when ulceration commenced, and the growth of the tumour soon followed. In the later periods of disease profuse hæmorrhages repeatedly took place from the tumour. After amputation of the foot the patient recovered.

The other half of the tumour is in the Museum of the Royal College of Surgeons of England.

Presented by Robert Ceely, Esq.

3334. Section of a large, soft, and brain-like Medullary Cancer, removed, after death, from a man's axilla. Part of it is connected with the great pectoral muscle. XXXV. 104

The patient was a man 37 years old, and this was the only tumour found in his body after death. In the nine months preceding his death, many tumours, most probably of the same nature as this, and some of them of very large size, were removed from parts of the trunk, neck, and right arm, by absorption, sloughing, or suppuration. A month before his death he was capable of active work, and the tumour here shown was very small. The history of the case is detailed in Sir Paget's "Lectures on Pathology," Third Edition, p. 692.

The characters of the tumour when recent are shown in a drawing, No. 583.

3335. A mass of Medullary Carcinoma, removed from the right iliac fossa, where it projected into the sac of the peritoneum. It is covered by a delicate transparent membrane resembling a serous structure—easily detached from the sub-

jaeent tumour—beneath which numerous vessels ramify, retaining the appearanee they presented when first examined. The tumour, though for the most part smooth upon its surfaee, is marked in some places by small nodular outgrowths, and in others is irregularly fissured; at the latter the investing membrane is thickened and slightly opaque. xxxv. 111

The growth was connected with a malignant affection of all the serous membranes, under which disease the patient sank slowly and died.

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SLOUGHING OF MALIGNANT TUMOURS.

3336. A large brain-like Medullary Tumour spotted with blood. xxxv. 60

The patient was a woman, 40 years old. The tumour, which was situated in the middle of the back, had been four months in progress. The integuments sloughed over it, and as she was endeavouring to raise herself in bed, the whole mass fell out through the slough. The sloughing was followed by profuse hæmorrhage, and she shortly after died.

3337. A mass of firm Medullary Cancer, separated by sloughing, from a man's thigh. The femoral artery (marked by a bristle) passes through it; the femoral vein, in which a pieee of glass is plaeed, lies in a deep groove on its inferior surfaee. xxxv. 107

The man was 46 years old, large, and strong. The tumour was of nine months' growth. In an attempt to remove it such hæmorrhage ensued, that the operation was discontinued when about half of its surface had been uncovered. It was gradually removed by sloughing, together with the portions of the femoral artery and vein, each about three inches long, which are here shown with it. No bleeding occurred either during or after the separation of the tumour, and the cavity left by it completely healed; but, within six months, the patient died with renewed growths of the same substance in the thigh and the lungs.

The case is fully related by Mr. J. A. Kingdon, in the *Medical Gazette*, 1850.

COLLOID CANCER.

3338. A Colloid Cancer, springing from the soft structures of the second toe. As the section through them shows, the phalanges are only surrounded by—they are not involved in—the mass.

The parts were removed by Pirogoff's amputation from a sailor, 45 years old. Ten years before he had observed soft, spongy, flattened papules, about as big as split peas, one on either side of the end of the toe. These gave him very little inconvenience, and grew very slowly till four months before his admission to the Hospital, when the disease began to grow quickly and became painful. In the fortnight preceding the amputation it encroached very rapidly on the soft parts of the dorsum of the foot as a soft, spongy, vascular mass, over which the skin was dusky, mottled, and streaked with distended veins.

A drawing showing the specimen in the recent state is preserved, No. 588.

3339. A portion of a large mass of Colloid Cancer, which was formed in the abdomen, apparently in connexion with the omentum. The section displays the whole of the morbid substance partitioned into cells of various sizes, which are bounded and intersected by thin layers of fibrous tissue, and are filled with a transparent, pale, yellowish, semi-fluid, jelly-like substance. The external surfaee of the morbid mass is nodulated and invested by a tough thick membrane. xxxv. 41

3340. Another mass of Colloid Cancer from the same patient. It appears to have been produced in the abdominal walls and in the substance of a thick and long cord-like adhesion between them and the omentum. It presents the same structure as the preceding. A portion of the transversalis abdominis muscle is attached to its outer surfaee. xxxv. 42

From a woman, between 40 and 50 years old, in whom the disease had been long in progress. The abdominal cavity was filled by three or four gallons of the gelatiniform substance which had escaped from its cells; and all the abdominal walls, the mesentery, and omentum, seemed to be involved in the disease.

3340a. A large, sprouting, ulcerated mass of Colloid Cancer, extending around the entire circumference of the mucous membrane of the descending colon for several inches. On the external surface of the intestine, having no peritoneal covering, there was an ulcerated aperture, half an inch in length, communicating with a large abscess cavity, which passed down into the pelvis, and thence to the thigh.

From a woman, aged 44 years.—See *Post Mortem Book*, vol. vii, p. 237.

VASCULAR TUMOURS—ANGIOMATA.

3341. Portion of Skin, and of a subcutaneous, venous, Vascular or Erectile Tumour. The lens-shaped tumour is included between the cutis and the fascia superficialis; it is well-defined, and part of its surface is covered with a thin scar, where a superficial ulcer over it healed. Its deeper part has the tint of partially decolorised blood. xxxv. 88

3342. The other portion of the same Vascular Tumour, dissected from the parts among which it was placed. It is minutely and rather deeply lobed; and, in this shrunken state, after the emptying of its blood-vessels, looks very like a piece of salivary gland, soft but tough, and pale brownish-white. xxxv. 89

The tumour was taken after death from a child 2 years old, in whom it had grown from the time of birth. During life it had the ordinary characters of the venous vascular tumours, being soft, compressible, dimly blue as seen through the skin, and became enlarged during forcible expiration. Six small veins could be traced to its borders; its arteries were too small to be distinct. Its whole substance appeared to be composed of minute blood-vessels, interlacing in the subcutaneous fibro-cellular and elastic tissues. The blood-vessels were generally cylindriform, but some were varicose or sacculated; all of them were of simple structure.

The case is described, and some of the blood-vessels are represented, in Sir J. Paget's "Lectures on Pathology," Third Edition, p. 578, fig. 92.

3343. Portions of a Nævus, which were removed from the inside of the cheek of a boy, 14 years old. In the upper portion a section of the nævus is made, showing the consolidation which the structure had undergone from repeated attacks of inflammation. With the middle portion an inch and a quarter of the parotid duct is connected. A bristle is passed through the duct. On this portion a multitude of fine fringe-like processes have been formed by the enlargement of the papillæ of the mucous membrane of the cheek. No inconvenience followed the removal of the piece of the parotid duct. xxxv. 21

3344. A small Tumour, laid open with the adjacent skin and subcutaneous tissue, which was removed from the fore-arm of a man, aged 63 years, where it had existed for two years. It was occasionally painful and exquisitely tender. When recent its section closely resembled in appearance that of the corpus cavernosum. It was sponge-like, having throughout a cellular structure, which freely communicated with small vessels, and possessed all the characters of an ordinary vascular tumour.

3345. The Pinna of an Ear, injected, affected with arterial angioma (aneurism by anastomosis). On the upper margin and posterior surfaces the outline of the dilated and tortuous vessels is seen, beneath one of which a piece of glass is placed. Part of the external surface is rough from superficial ulceration. The section shows that the growth is composed of soft connective tissue, permeated by moderate-sized vessels.

Microscopic Examination.—A section shows large tortuous vessels with thin walls, giving off capillaries of nearly uniform size, which anastomose and form a close and more or less regular network. The walls of the arterioles are formed of a layer of endothelium, supported by a thin lamina of condensed connective tissue: the capillaries of endothelial cells. The connective tissue of the growth is loose and contains numerous round cells.

From a woman, aged 21 years. She had a lump on the upper part of the pinna since birth, which always pulsated. It grew very gradually until about six years ago, when it began to extend more rapidly. Ligature of a prominent portion, and later the insertion of pins beneath a part of the growth, were tried without effect. The ear stood out prominently from the head. It was of a dull red or purple colour, and of soft doughy consistence. There was distinct, slightly distensile pulsation, arrested by pressure on the carotid artery, with a marked humming bruit. The posterior auricular and temporal arteries, which supplied the growth, were much enlarged and pulsated forcibly, but the morbid change did not extend to the integuments of the head and face. The ear was removed by an incision around its attachment, the divided vessels being held by assistants. Very little blood was lost.—See account of case by Mr. Eve in the *Transactions of the Pathological Society*, vol. xxxi, 1880; also *Lucas Ward Book*, vol. vi, p. 130.

A drawing of the ear, taken before removal, is preserved, No. 590; Microscopic specimens, also, Nos. 177, 178, and a drawing of the microscopic appearances, A 53.

3346. The right external Ear of a man, aged 23. An erectile or vascular tumour occupies the posterior surface and involves the adjacent subcutaneous tissues, and part of the scalp. "The back of the auricle, in nearly the whole extent, was puffed out by a superficially-lobed, soft, easily compressed, and elastic swelling, which pulsated fully and softly. Two similar and continuous lobes of swelling were under the scalp above and behind the auricle, and these were well-defined above, but gradually subsided below. The skin covering the swelling was for the most part dusky purple, but, except where it was scarred, appeared of healthy texture; the skin of the interior of the auricle and its fibro-cartilage also appeared unaffected, except in the turgescence of the blood-vessels. A posterior branch of the superficial temporal artery passing by the front of the swelling, and a branch of the posterior auricular artery passing behind it, felt large and pulsated strongly; the common carotid artery also on this side pulsated more fully than that on the other. Its distinct soft bruit was audible, synchronous with the pulsation in the tumour, and distinct pulsatile movement was visible. The disease had been noticed like a very small pimple when the patient was four years old. It had from that time regularly increased."

The case is described at greater length by Sir J. Paget in his "Lectures on Surgical Pathology," Third Edition, p. 581. XI. 43

3347. Section of a Tumour removed from the thigh. It consists of cells or cysts, of various form and size, filled with blood, and separated by a soft medullary substance of a brownish-yellow colour and obscurely fibrous texture. In the upper part of the specimen are some cells distinct from the rest, which were seated in the adipose tissue of the limb. On the integuments covering the tumour there is a small tubercular elevation at one part, and at another an ulcerated opening. XXXV. 14

The patient was a woman, 45 years old. The tumour had been growing three years without pain, but with much impairment of health. Blood, sometimes as much as a pint at a time, was discharged twice or thrice a week from the ulcerated surface of the tumour. The other half of the tumour is in the Museum of the Royal College of Surgeons of England.

3348. Section of a Tumour removed from a man's thigh. The tumour, hoof-shaped, and about seven inches in its chief diameter, projected from the outer part of the middle of the thigh, like an outgrowth of skin. The portion not covered by skin rested, as it here appears, on the fascia superficialis; it is well defined, and very slightly lobed. Its cut surface has, in most parts, a very fine spongy aspect, and looks like a close-textured erectile tissue, on account of the great number of sections of minute blood-vessels by which it is grooved and perforated. Large veins, some of which are indicated, lie at its base, and in the subcutaneous tissue over it. Its general texture is nearly white, but portions of it have a rusty tinge from decolourised blood. XXXV. 90

The patient was 32 years old. The tumour, commencing at the seat of a slight musket-wound received six months previously, had been ten years in progress, growing constantly and

with severe pain. It was firm, but by long compression could be reduced to nearly half its size, as if by squeezing blood from it. Several small arteries pulsated at its base; and very large veins, like tortuous sinuses, converged from it to the upper part of the saphena vein. The skin had been ulcerated on a small portion of the tumour for twelve months, and the ulcer had bled severely.

The microscopic structures were obscure, but confirmed the appearances which made it probable that the tumour is one of the venous vascular, or erectile kind; and of that variety in which the blood-vessels, from whose growth the peculiarities of the tumour are derived, are the capillaries and veins of a new-formed part.

A further account of the case is in Sir J. Paget's "Lectures on Pathology," Third Edition, p. 583.

A drawing is preserved, No. 593.

3349. A Tumour which was pendulous from the skin of an axilla. It is so changed by the congestion that followed the tying of its pedicle, that its proper textures cannot now be distinguished. It had the general aspect of a pedunculated outgrowth of skin: but nearly its whole mass consisted of minute blood-vessels confusedly arranged and of various sizes. XXXV. 91

The patient was 60 years old. The growth had existed many years, and shortly before its removal had increased quickly. It was dark, hard, and knotty; it pulsated distinctly, and a large artery could be felt in its pedicle. It is probable that these peculiarities depended on the morbid growth of the capillaries and minute arteries of a previously ordinary cutaneous outgrowth.

A further account is in the work last cited, Third Edition, p. 593.

Presented by Dr. Ormerod.

3350. A Tumour divided by a vertical section, which was removed from the inner part of the thigh of a woman, aged 55. Its base rested on the deep fascia, and when dissected off presented a smooth, uniform surface, in which the orifices of a few large veins were visible. The greater portion of its substance is sponge-like but compact, and consists of a dense vascular network. The part towards the circumference is solid, and its minute structure is obscurely fibrous. The tumour had existed for five years, and for the last six months had more rapidly increased in size. XXXV. 121

3351. A Tumour removed from the substance of the left semi-tendinosus muscle of a girl, aged 17 years. It is principally composed of blood-vessels. XXXV. 118

3352. Section of a Tumour removed from a woman's leg. It was lens-shaped, broadly oval, about four inches in its chief diameter, and an inch and a half in thickness, attached over the fascia of the leg by a narrow base, which all its margins overhung. It is close-textured, but soft and brittle, of ochre-yellow colour, and on its cut surface presenting very numerous minute apertures, like the orifices of divided and collapsed small veins. The skin covering it is thinned and tense. At its upper part is a large clot of blood, extravasated the day before the tumour was removed. XXXV. 63

The patient was a healthy-looking woman, 51 years old. Twenty years before the removal of this tumour, and from the same part of the leg, a "wen" was removed which had been growing for six months. She remained well for ten years, then this tumour began to grow at the scar of the previous operation. It increased slowly for nine years, and very quickly for the last year, during which also bleeding several times occurred from a superficially ulcerated part of the skin. It was noticed that, by pressure, the tumour could be much reduced in size, as if by pressing blood from it; and that, on removing the pressure, it quickly regained its size, as if by the refilling of very numerous blood-vessels. Under the microscope its tissues were found obscured, and indistinguishable through extreme fatty degeneration. It may be regarded as a degenerate venous erectile, or vascular tumour.

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TUMOURS OF UNCERTAIN NATURE.

3353. A Bony Tumour, or outgrowth from the junction of the petrous portion

of the temporal bone with the body of the sphenoid and the occipital bones on the left side of the base of the skull of a woman, aged 35 years. The structure of the outgrowth appears to be of a firm material like dry cheese, infiltrated throughout with granules of earthy matter. The outer layers immediately beneath the dura mater are formed of firm dense bone. Microscopic examination showed an abundance of fat, with *débris* of cells mixed with earthy particles. The tumour projected into the posterior fossa of the base of the skull, and was not discovered until the complete removal of the brain. The latter appeared perfectly healthy.

The patient was admitted into the Ophthalmic Ward on account of suppuration in the orbit and frontal sinus following a blow upon the eye and nose. Meningitis resulted and caused her death, the inflammation evidently spreading from the frontal sinus throughout the entire right side of the meninges. The membranes on the left side of the brain, and at the base in the situation of the tumour were perfectly normal.—See *Ophthalmic Ward Book*, vol. i, p. 147.

3354. A Tumour, which was removed from the substance of the triceps muscle of the left arm of a woman, aged 32 years. It was situated two or three inches above and behind the elbow-joint. It was tender when handled, and the pain extended down the fore-arm to the two last fingers. In the operation the ulnar nerve was found passing tightly over its surface. The woman had been aware of its existence for five or six months. The tumour has a fibrous structure, but the distinction between it and the investing portion of the triceps is by no means well-defined. The ruddy fibres of the muscle seemed to pass abruptly into the pale, dense, and more uniform substance of the tumour.

3355. The outer portion of the hand of a boy, aged 14 years. Some days before the limb was removed, the palm of the hand became painful and swollen, apparently without any previous injury. It was punctured and some dark fluid blood escaped. From that time it rapidly increased, a large mass protruding through the aperture. The whole of the palmar surface is occupied by a large mass through which the flexor tendons pass unchanged. When recent, it presented the aspect of blood clot in a state of decomposition. The microscopic characters were those of fibrin and blood clot.

3356. Section of a part of the integuments and muscles of an upper Arm. The subcutaneous tissue, and the cellular tissue connected with it and extending between the muscles down to the bone, are indurated, opaque-white, and fibrous like the tissue of a cicatrix. Small portions only of the subcutaneous fat remain. Imbedded in this indurated substance, and in a few instances in the adjacent muscles also, are numerous small, nodulated, soft tumours. They now present a pinkish colour; but, in the recent state they were greyish, glistening, nearly transparent, and jelly-like. Many of the tumours are closely grouped; and the skin over some of them is raised in a coarsely tuberculated form, and is excoriated or covered by a thin cuticle. XXXV. 58

3357. A section of the integuments which covered the elbow of the same arm, exhibiting a large oval mass, apparently composed of the same substance as the tumours just described, but firmer and more uniform. Its exposed surface is formed of healthy-looking granulations. Its base rests on the aponeurosis of the triceps humeri muscle. XXXV. 59

The patient was a woman, 32 years old. The disease had existed eight years. It commenced with a deep-seated induration in the arm, whence it extended by the formation of fresh tumours both upwards and downwards, till the surface of nearly the whole upper arm was tuberculated. The patient recovered after amputation at the shoulder-joint.

CYSTIC OR ENCYSTED TUMOURS—CYSTOMATA.

I. CYSTS WHICH PROCEED FROM TRANSFORMATION OF NORMAL HOLLOW SPACES.

a. Cysts through enlargement of normal serous sacs.

3358. A Bursa removed from over the olecranon. It contains two distinct cavities, separated by a thin septum, but the walls of the cavities are continuous, as if the bursal cyst had originally been single. They contained a brown serous fluid.

The patient was a drayman; he could give no explanation of the origin of the bursa.

3359. A Cyst removed from the palm of the hand. It contained a serous fluid, and extended over the whole length of the metacarpal bone of the little finger, to the periosteum of which it was at one part closely adherent. Its walls are composed of a tough fibrous tissue; its exterior is smooth; its interior has a slightly polished surface, rendered irregular by prominent intersecting fibrous bands. XXXV. 34

b. Cysts through distension of closed Follicles.

3360. A Cyst, attached by a thick pedicle to the surface of an ovary.

3361. A Section of an Ovary, having its surface covered by many small projecting cysts. Some minute cysts are also imbedded in its substance, which is dense and fibrous. Two corpora lutea are cut across near the surface, the larger of which is dilated into a small cyst.

Removed from a patient whose opposite ovary was affected with cystic disease, for which ovariotomy was performed.

c. Cysts by Transformation of Mucous Membrane Canals from Distension.

3362. A Uterus and its appendages. The right Fallopian tube is greatly dilated, forming a large cyst, globular at its extremity, but having the form of a tortuous tube at its attachment to the uterus; it contained a serous fluid. The interior of the cyst presents some septa, formed apparently by folding and unequal dilatation of the tube. Several bands of adhesion are attached to the cyst, the uterus, and broad ligaments. The ovary is seen below the cyst, and between it and the uterus. The wall of the uterus is thickened and a fleshy growth projects into its interior.

From a lady, aged 53 years (married 28 years). During the last twenty years she had had five miscarriages. Menopause at 52 years. In October, 1879, she began to suffer pain in the right groin, intense every night for from six to twelve hours. In January, a tumour was felt behind and to the right of the uterus. She died in May, 1880, apparently from exhaustion, and no disease of any other organ was found on post mortem examination.

Presented by Dr. Matthews Duncan.

d. Cysts formed by Closure or Obstruction of, and accumulation of the Secretion within, the Ducts of Glands and their prolongations: so-called Retention Cysts.

3363. A cutaneous Cyst removed with the skin covering it from some part of the border of the hairy scalp. It is regular, nearly spherical, smooth, and thin-walled. The greater part of its internal surface is lined with compact, but easily broken material, consisting, probably, of epidermal scales and fatty matter. XXXV. 105

Presented by Dr. James Reid.

3364. Cutaneous Cysts, which were removed from the scalp. Their walls are thick and firm, and they contain a thick, pale, grumous substance. XXXV. 7

3364a. Urinary Organs of a Fœtus. The bladder is greatly dilated and hypertrophied; the ureters equally so, especially near their terminations in the bladder. The kidneys are converted into agglomerations of numerous cysts, lined by thick corrugated membrane, many of which appear to be formed by dilatation of the calyces and infundibula. The cysts were filled with transparent fluid. There is no trace of proper renal parenchyma. A. 116

3365. Portion of a Fibro-Adenoma of the mammary gland, in which a smooth-walled cyst is imbedded.

e. Cysts arising from Blood and Lymphatic Vessels.

3366. A small oval Cyst, with a wrinkled, but polished lining membrane, and exhibiting two valves, like those of a vein, attached to its wall. On one of these valves is a small soft lobulated growth. The walls of the cyst are thin, and loosely attached to the skin and other adjacent parts. APPENDIX. 10

The cyst was full of blood, and was removed from the thigh of an elderly woman, in whom it occupied the position of the upper part of the internal saphenous vein. It appears to have been formed by a portion of the vein remaining open between two points in which its canal had been obliterated. No portion of a blood-vessel could be traced opening into the cyst.

f. Cysts connected with the remains of Fœtal Organs; or from the inclusion or displacement of Fœtal Structures; and some Congenital Cysts.

3367. The extremity of a Fallopian Tube, with the ovary. A small cyst is attached by a slender thread or pedicle, about two inches long, to the fimbriated extremity of the Fallopian tube; there is another similar, but much smaller thread. These are the hydatids of Morgagni, believed to be the remains of the upper extremities of Müller's ducts.

3368. A quantity of long pale hair, with portions of fatty matter, from a cyst. The fatty matter is in little globules arranged like beads upon the hairs. XXXV. 56

The cyst was removed from beneath the skin of the chest of a middle-aged man. The rest of its contents consisted of a pale creamy fluid.

3368a. Portions of a Tumour, from the anterior mediastinum. They consist of irregularly lobed portions of skin and fat, a bone resembling a superior maxillary bone, and another portion of bone like an alveolar border, with sockets, in which are imbedded two incisor, two bicuspid, and three molar teeth. VOL. II. A. 177

The patient was a woman, 21 years old. The tumour was probably congenital. Fourteen months before her death, while she was suffering apparently with pneumonia, a part of the tumour projected below the sternal extremity of the left clavicle, and pulsated regularly and strongly. It was treated as an aneurism, with repeated bleedings, &c., and after enlarging for some time, and threatening suffocation by pressure on the trachea, it began to subside, and at length wholly disappeared from sight and touch. A month after this, the patient died with renewed pneumonia.

The tumour was closely attached to the upper two-thirds of the sternum, and to the sternal extremity of the right clavicle. The arteria innominata was completely enveloped by the thickened cellular tissue which connected the tumour with the surrounding parts; and it is probable that hence was derived the pulsation which was felt while the tumour was inflamed and swollen. Besides the substances shown in the preparation the tumour contained serous fluid, and sebaceous matter, mixed with hair. The bones were enclosed in a fatty mass.

The case is related by Dr. Gordon, in the *Medico-Chirurgical Transactions*, vol. xiii, p. 12, 1825.

Presented by William Kingdon, Esq.

3369. A Cyst removed from a dark-red Cow. It lay beneath the skin, imbedded in a large quantity of fat, in front of the shoulder joint. It is filled with hair and sebaceous matter. XXXV. 116

Presented by Mr. Hartill.

3370. An Ovary, in which is a single cyst containing a mass of fatty matter, with stiff, pale hairs imbedded in it. XXXI. 3

3371. A Cyst (? dermoid) with thin tough walls, which was removed from beneath the tongue. It projected into the mouth, and extended so far downwards as to be prominent in the front of the neck. Its contents are a firm grumous and granulated suet-like substance. XXXV. 25

3372. The Pelvis of a female infant, with a Cyst attached to it. The cyst is about six inches in diameter, and is formed of dense membrane, covered with integument. It is firmly attached to the inferior border of the walls of the pelvis, and a small portion or lobe of it extends into the pelvis between the rectum and the sacrum. At the upper part, small cysts in its walls project into the cavity of the main cyst. These smaller cysts contained a serous fluid; the larger cavity contained serous fluid and blood, and is lined with a fine transparent membrane. The sacrum and coccyx are perfect, but firmly attached to the posterior and upper part of the cyst. No communication existed between the cyst and the canal for the spinal cord formed by the dura mater; but, external to the dura mater, there were communications between the cyst and the spinal canal of the sacrum and coccyx, through some of the foramina for the anterior sacral nerves. Certain of these nerves also were traced to the interior of the cyst.

The child was born alive at the full period. In its passage through the inferior aperture of the pelvis, the tumour burst, and discharged a large quantity of sanguineous fluid. After birth the child cried and moved freely: but it lived only two hours, dying, apparently, in consequence of the hæmorrhage from the cyst.

Presented by Thomas Wormald, Esq.

3373. Portion of a Spine, with the Pelvis, and a Congenital Tumour, from a child 2 years old. The tumour measures fourteen and a-half inches in circumference: it projects from the lower part and right side of the pelvis; and is composed of several oval and spheroidal lobes. One portion is solid, and resembles a fibrous tumour of the uterus. Another, much larger, consists of two cysts, one enclosed within the other, and both having dense, fibrous, laminated walls, a quarter of an inch thick. They contained a clear yellow fluid. The upper and narrow portion of the tumour is solid, and extends into the cavity of the pelvis through its inferior aperture. It reaches nearly to the top of the sacrum, and encompasses the bladder and rectum. The sacrum and other parts of the spine are perfect: no communication exists between the tumour and the canal for the spinal cord; and its connections with the sacrum and the pelvic organs are by loose cellular tissue. VOL. II. A. 129

The child was in other respects healthy and well formed. The tumour at birth was nearly as large as an orange, and increased in proportion to the child's growth. Death occurred during measles.

This and the preceding specimen are described by Mr. Stanley, in the *Medico-Chirurgical Transactions*, vol. xxiv, p. 231, 1841.

Presented by J. F. Harding, Esq.

3374. A Congenital Cystic Sacral Tumour, springing from the buttock posterior to the sacrum and coccyx—which are well developed—not extending into the pelvis, and having apparently no communication with the spinal canal. The right section shows some large cysts, which contained a brownish fluid: from

the lower a membranous cyst hangs. The left section shows several cysts filled with a soft brain-like very vascular substance. The rectum is exposed by the division of the sacrum. VOL. II. A. 187

From an infant, born at full term.

3375. Part of a large Tumour removed from a woman's nates. The tumour consisted chiefly of a collection of cysts, with tough fibrous walls, lined by smooth membrane, and variously filled. Some contained serous fluid; some a thicker, creamy, or fatty matter; in some were small bundles of hair, loose, or inserted in their walls. Other parts of the tumour consisted of solid substance, in which irregular masses of bone were imbedded. VOL. II. A. 180

The patient was a woman about 50 years old. The tumour was congenital, and had grown to the size of the patient's head. It was pendulous from the nates, and parts of it had suppurated. Its deeper attachments were closely connected with the coccyx, rectum, and vagina. The patient recovered perfectly after its removal; a small sinus remained at one portion of the wound, but no recurrence of the growth ensued.

3376. The portions of Bone obtained by maceration from the tumour last described. They are of irregular nodulated forms, and not comparable with any of the natural bones of the skeleton. VOL. II. A. 181

II. CYSTS FROM EXTRAVASATIONS OF BLOOD.

3377. Portion of Dura Mater, upon the surface of which there is an adventitious membrane, in the form of a sac which was filled by coagulated blood. The membrane is of a dense texture, and of about the thickness of the dura mater. Portions of the blood still remain attached to the inner walls of the sac.

VI. 52

3378. A specimen, showing Cystic Degeneration of a Corpus Luteum. The ovary was found with a large mass of omentum in an inguinal hernia on the left side of a woman, aged 35 years: it is larger than natural. Two corpora lutea are seen in its substance; one, near the surface, presents a normal appearance; the other, near the centre, appears as a large cavity, an inch in diameter, filled with partially decolorised grumous blood, which escaped when the ovary was incised.

The opposite ovary is preserved in Sub-Series A, No. 207.

III. CYST OF PRIMARY ORIGIN.

3379. A Cyst in a Pectoral Muscle connected with tumours, character unknown, of the breast and liver.

CYSTS OF UNCERTAIN NATURE.

3380. Portion of a Diaphragm, in the substance of which, between its pleural and peritoneal coverings, there is a cyst of lobulated form, containing a serous fluid.

The cyst may have originated in one of the lymphatic vessels of the diaphragm.

A drawing is preserved, No. 595.

3381. A Cyst, removed from beneath the skin covering the lower part of the scapula. It was filled with a fluid resembling venous blood. Its walls are soft, and its interior is polished, but rendered irregular by numerous decussating prominent ridges, which give it a striking resemblance to the interior of an auricle. Its walls are from half a line to two lines in thickness: at the parts where they are thickest, they contain numerous small cysts filled with a dark coloured fluid. XXXV. 38

The patient was a lad, 15 years old. The tumour had existed eight years; it had grown rapidly for a year, and given pain for three months previous to its removal.

Presented by George Macilwain, Esq.

3382. The halves of a Calcareous Body, removed from a cyst in the ham. It has a laminated structure. Fragments of it treated with weak acid show under the microscope a granular organic structure like fibrin.

The cyst, which occurred in a man, aged 48 years, lay along the tendon of the biceps at the outer margin of the ham, and contained half an ounce of serum. The patient had had no necrosis or abscess, and there was no large vein in the neighbourhood of the cyst.

Presented by Sir James Paget, Bart.

SERIES LI.

VARIOUS INSTRUMENTS AND SUBSTANCES PRODUCING INJURIES; AND OTHER MISCELLANEOUS SPECIMENS.

3383. A Clasp-knife, which an insane woman thrust through her pharynx.

After death, which took place from hæmorrhage from a wound of the internal carotid artery, the knife was found lying by the side of the internal carotid artery, and resting on the Longus Colli muscle.

The artery is preserved in No. 1377A, Series VIII.

Presented by T. Smith, Esq.

3384. The Breech of an old-fashioned Gun, which was driven into the brain of a youth, aged 19, by the bursting of the piece. It entered the forehead to the left side of the middle line, one inch above the eyebrow. He was able to answer questions within a few hours after the accident, and had no paralysis. He survived the injury nine days; was conscious and able to answer questions until the day before his death. The breech was removed from the brain after death.

Presented by H. Bird, Esq.

3385. A piece of Stick upon which a boy, who fell down a lift, was impaled. It entered the right buttock at the fold of the nates and passed through the inner surface of the thigh as far as the skin covering Scarpa's triangle, which it did not penetrate. A piece of cloth was carried before the stick, and was extracted through an incision in the front of the thigh.—See *Kenton Ward Book*, vol. vi, p. 100.

3386. A Pin blackened by corrosion. It was swallowed by a boy, aged 10 years; some months afterwards the point protruded through the skin near the margin of the anus. No inconvenience had been experienced with the exception of slight pain a few days previous to its extraction.

Presented by Surgeon-Major Greenhill.

3387. Portion of the Tusk of an elephant in which a bullet is lodged.

3388. A similar specimen.

3389. A similar specimen, in which the section is carried through the bullet.

3390. Portion of the Tusk of an elephant through which a bullet has passed.

Presented by Mr. G. Howard.

3391. A Zwanch's Pessary, which had remained in the vagina for one year, and had caused a large fistulous opening between the bladder and vagina. It was extracted with considerable difficulty on account of some constriction of the vagina below it. There is a coating of phosphates on the pessary.

SERIES LII.

URINARY CALCULI.*

CALCULI OF WHICH THE NUCLEUS OR CENTRAL PORTION CONSISTS OF URIC ACID.

CALCULI CONSISTING MAINLY OF URIC ACID.

1. Section of a Calculus. Uric Acid, nearly pure.

From the bladder of a man aged 39. Lithotomy by Mr. Earle.

2. Large Calculus composed almost entirely of Uric Acid.

Lithotomy by Mr. Savory.

3. A Calculus removed from the bladder of a man, aged 50, by lateral lithotomy. He had suffered more or less from symptoms of stone for twenty years, and for some weeks prior to the operation a large quantity of pus had been passed with the urine. The calculus weighs nine ounces, three drachms. It is composed almost entirely of Uric Acid, with mere traces of Phosphates.

He recovered from the operation, but died subsequently from disorganised kidneys and uræmia.

4. A Urinary Calculus consisting almost entirely of Uric Acid, which was successfully removed by lateral lithotomy.

Presented by Sir James Paget.

5. A Calculus removed after death from a man aged 53 years. It consists for the most part of Uric Acid arranged in laminæ, with, in places, thin laminæ of mixed Phosphates intervening. It measures three and three-quarter inches in its longest diameter, and two and a quarter inches in its shortest. It weighs thirteen and a quarter ounces.

The patient had suffered for over twenty years from difficulty in micturition and vesical symptoms. None of his numerous medical attendants had sounded him. The calculus completely filled the bladder.

Presented by J. D. Halme, M.D.

5a. Section of a large Calculus composed throughout of pure Uric Acid.

* In this Catalogue of Calculi the old nomenclature has been retained, since it is still commonly employed in Clinical Surgery, and the adoption of the new nomenclature would have involved the alteration of all the descriptions. The museum is indebted to Thomas Taylor, Esq., F.R.C.S., the Analyst of the Concretions in the Museum of the Royal College of Surgeons of England, for the analysis of most of the Calculi, which were included in the catalogue of the Pathological Collection published in 1846. Those recently added to the Museum have been analysed by W. J. Russell, Esq., Ph.D., F.R.S.

5b. A large Calculus composed principally of Uric Acid, but also containing Urate of Calcium, which increases in amount towards the circumference. From a Hindoo.

6. Sections of a large laminated Calculus. Uric Acid.

Presented by the Council of the Royal College of Surgeons in England.

7. Section of a large Calculus. Uric Acid.

Lithotomy by Percivall Pott.
Presented by the Council of the Royal College of Surgeons of England.

8. Sections of a Calculus. Compact Uric Acid. Analysis by Dr. Huc.

From the bladder of a man 65 years old. Lithotomy by Mr. Stanley. The bladder and prostate gland are preserved in Series XXXIX, No. 2839.

9. Section of a Calculus. Uric Acid, nearly pure.

From the bladder of a boy 12 years old. Lithotomy by Mr. Earle.

10. Sections of a large Calculus, of pure, compact Uric Acid.

From a man between 30 and 40 years old. Lithotomy by Sir Wm. Lawrence.

11. Sections of a Calculus. Uric Acid, compact and very pure.

From the bladder of a man 73 years old. Lithotomy by Sir Wm. Lawrence.

12. Two Calculi composed principally of Uric Acid, removed from the bladder of a man aged 50 years. Symptoms of stone had existed for many months. They weighed together four ounces, two drachms, one scruple.

13. A Calculus composed of Uric Acid, which was removed from the bladder of a man, aged 57, in whom symptoms of stone had existed for four years. It weighs nearly three ounces.

14. Section of a Calculus. Uric Acid.

15. Section of a Calculus. Impure Uric Acid.

16. Section of a Calculus. Uric Acid. Analysis by Dr. Hue.

17. Section of a Calculus. Uric Acid, nearly pure.

18. Sections of a Calculus. Uric Acid, with some Urate of Ammonia.

From the bladder. Lithotomy by Sir Wm. Lawrence.

19. Fifty-three Calculi, with flattened, mutually adapted, and smooth surfaces. Uric Acid, nearly pure.

Taken from the bladder of a man after death.

20. Twenty-eight entire small Calculi, and parts of four or five others, from the bladder of a gentleman, 68 years old, who had slight enlargement of the prostate gland. Their surfaces are smooth and flat. They are composed of Uric Acid.

Lithotomy by Sir Wm. Lawrence.

20a. Numerous small Urinary Calculi, either rounded or faceted, and composed of Uric Acid.

21. Two Calculi and the halves of three others. Composed of compact Uric Acid,

surrounded by loosely cohering and cracked Uric Acid. External layer, Phosphate of Ammonia and Magnesia, with a small quantity of Phosphate of Lime.

From the bladder of a man on whom the operation of lithotrity had been performed several years before death. There were eleven calculi of the same kind.

Presented by Thomas Wormald, Esq.

22. Calculi from a Urinary Bladder. The two larger, chiefly composed of rather loosely aggregated Uric Acid, were removed by the operation of lithotomy. The first was crushed in the extraction. The second, extracted entire, is in the shape of a three-sided pyramid, the base and sides of which are all smoothly flattened. The fragments of the first indicate that it may have had nearly the same shape. At the operation it was thought unlikely that such a shape would be acquired, unless more than two calculi were present, and subject to mutual contact and friction. Long search was, therefore, made for others; but none existed, except two minute rough portions, which could have had no share in shaping the larger calculi that were extracted.

The patient was 51 years old. He had suffered, at times severely, for eight years before the operation, and died on the fourth day after it.

23. Three smooth and flattened Calculi. Uric Acid, nearly pure; Nucleus crystalline.

From the bladder of a man 64 years old. Lithotomy by Mr. Earle. Nine calculi were extracted at the operation, and thirty small ones from the kidney after death.

24. Calculi of Uric Acid.

Presented by the Rev. G. Henslow.

25. Sections of a Calculus. Uric Acid, nearly pure.

From the bladder of a boy 12 years old. Lithotomy by Mr. Vincent.

26. Calculi composed of nearly pure Uric Acid.

From the bladder of an elderly man, which is preserved in Series XXIX, No. 2398. The small portions at the lower part of the bottle were broken in an operation of lithotrity by Mr. Stanley. The larger calculus, which has been divided vertically, lay in a deep recess of the bladder behind the prostate, and was not detected by the instruments.

27. Five large portions of Calculus passed through the urethra. Compact Uric Acid.

Lithotrity by Mr. Vincent.

28. Fragments of a Calculus. Uric Acid.

From the bladder of a man, 25 years old, after lithotrity by Mr. Stanley. The largest of the fragments became impacted in the spongy portion of the urethra some days after the operation of crushing, and was removed by operation.

29. Fragments of a Calculus. Impure Uric Acid.

From the bladder of a man 60 years old. Lithotrity by Mr. Stanley.

30. Fragments of a Calculus. Impure Uric Acid.

From the bladder of a man 60 years old. Lithotrity by Mr. Stanley.

31. Fragments of a Calculus. Chiefly Uric Acid.

From the bladder of a man 45 years old. Lithotomy by Sir Wm. Lawrence.

CALCULI HAVING TWO LAYERS.

URIC ACID. URATE OF AMMONIA.

32. Sections of a Calculus. Uric Acid, surrounded by a thin coating of Urate of Ammonia.

33. Section of a Calculus. Uric Acid; surrounded by Urate of Ammonia, which is probably mixed with Urate of Lime.

34. Sections of a Calculus. Uric Acid, surrounded by a layer of Urate of Ammonia, containing Phosphate and Oxalate of Lime.

Removed after death from the bladder of a man who was supposed to have been cured by drinking lime-water. Two calculi were found in the bladder.

35. Sections of a Calculus. Nucleus, Uric Acid: the remainder, Urate of Ammonia with a small quantity of Phosphate and Oxalate of Lime.

From the bladder of a boy 4½ years old. Lithotomy by Mr. Vincent.

36. Sections of a Calculus. Nucleus, Uric Acid; coated by a thin layer of Urate of Ammonia, containing Phosphate and Oxalate of Lime.

URIC ACID. OXALATE OF LIME.

37. Calculus composed of Uric Acid covered by Oxalate of Lime.

38. Sections of a Calculus of the kind commonly called the Hemp-Seed Calculus. Nucleus, Uric Acid, covered by a thin smooth layer of Oxalate of Lime.

38a. A Calculus having a small nucleus composed of Uric Acid, surrounded by a thick layer of Oxalate of Lime.

URIC ACID. EARTHY PHOSPHATES.

39. Sections of a very large Calculus. Uric Acid coated by the Phosphates. Oxalate of Lime is diffused through some parts of the latter.

From the bladder of a man 60 years old. Lithotomy by Sir Wm. Lawrence.

40. A Calculus. Uric Acid, surrounded by the mixed Phosphates. A large portion of the exterior has been removed.

41. Section of a Calculus. External layer, Phosphates, slightly fusible; Nucleus, Uric Acid, containing, apparently, some veins of Urate of Ammonia.

Presented by H. Earle, Esq.

42. Six rough granulated Calculi. Nucleus, Uric Acid; externally, fusible phosphates. Analysis by Dr. Hue.

From the bladder of a man.

43. Sections of a Calculus. Nucleus, impure Uric Acid; exterior, the mixed Phosphates.

From the bladder of a man 21 years old, who had suffered with symptoms of stone from childhood. Lithotomy by Sir Wm. Lawrence.

44. Section of a Calculus. Nucleus, Uric Acid; with a coating of the Phosphates.

45. Sections of a Calculus. Central portion, an impure Uric Acid; the deeper coloured part is of a more pure Uric Acid, while the external part consists of the Phosphates with some Oxalate and Carbonate of Lime. Analysis by Dr. Prout.

From the bladder of a boy 14 years old. Lithotomy by Mr. Stanley.

46. A Calculus. Phosphates, coating, probably, a Nucleus of Uric Acid.

From a child 2 years and 10 months old, who died after lithotomy, with hæmorrhage from one kidney and suppuration in the other.

Presented by E. A. Lloyd, Esq.

CALCULI HAVING THREE LAYERS.

URIC ACID. URATE OF AMMONIA. EARTHY PHOSPHATES.

47. Section of a Calculus. Uric Acid, alternating with Urate of Ammonia containing Oxalate of Lime; surrounded by a thick layer of the Phosphates.

From the bladder of a man 36 years old. Lithotomy by Mr. Earle.

48. Sections of a Calculus. Nucleus, Uric Acid; surrounding this a grey band of Urate of Ammonia; remainder, mixed Phosphates with crystals of the Phosphate of Ammonia and Magnesia.

From the bladder of a boy 10 years old. Lithotomy by Mr. Stanley.

49. Sections of a Calculus. Nucleus and surrounding yellow portion, impure Uric Acid with Oxalate of Lime, apparently in distinct layers; grey layer around these, Urate of Ammonia with a much larger quantity of Oxalate of Lime, uniformly mixed; external layer, Phosphate of Ammonia and Magnesia, with some Phosphate of Lime.

From the bladder of a man 57 years old. Lithotomy by Mr. Earle. After the wound had healed the patient died with diseased bladder and kidneys.

50. Calculus composed almost entirely of Uric Acid and Urates. The outer part contains also Phosphate of Magnesia and Ammonia, with a trace of Calcium Phosphate. The outer layer is infusible, but the porous portion is fusible. The Nucleus is almost free from phosphates.

51. Two Calculi. The larger is composed of Phosphate of Ammonia and Magnesia, with Phosphate of Lime and a considerable quantity of Urate of Ammonia, Uric Acid, and Animal Matter, probably investing a nucleus similar to the smaller divided calculus, which consists at its centre of Uric Acid nearly pure, surrounded by Urate of Ammonia, with Phosphate and Oxalate of Lime, and coated by the same mixture as the larger.

From the bladder of a boy 8 years old. Lithotomy by Mr. Abbott. The small stone was first removed; and the larger one two years afterwards.

52. A Calculus. Nucleus, Uric Acid; surrounded by a layer of Uric Acid, Urate of Ammonia, and earthy Phosphates; external layer, triple Phosphates.

From a boy. Lithotomy by Mr. Stanley.

URIC ACID. OXALATE OF LIME. EARTHY PHOSPHATES.

53. Section of a large Calculus. Nucleus, Uric Acid; around it, a thin layer of Oxalate of Lime; the outer white layer fusible. Analysis by Dr. Hue.

From the bladder of a man 42 years old. Lithotomy by Sir Wm. Lawrence.

54. Calculus removed from the bladder of a boy aged 11 years. He had suffered from stone for four or five years. The outer layer consists of the Phosphates and Uric Acid. The middle layer of Oxalate of Lime and Uric Acid. The nucleus of Uric Acid alone.

55. Three principal layers exist in this Calculus. The outer layer is chiefly

Phosphate and Carbonate of Lime; middle layer chiefly Oxalate of Lime, and nucleus chiefly Uric Acid and Oxalate of Lime, with some Carbonate of Lime.

URIC ACID SUCCEEDED BY FOUR OR MORE LAYERS.

56. Sections of a Calculus. Nucleus, Uric Acid, surrounded by a thin layer of Oxalate of Lime; around this, Uric Acid nearly pure; the remainder, Uric Acid and Oxalate of Lime in alternate layers.

57. A Vesical Calculus, weighing four ounces, removed by the lateral operation of lithotomy from the bladder of a man aged 24 years. The nucleus is composed of Uric Acid, the white mass of Phosphate and Carbonate of Calcium. The narrow brown zone near the exterior contains also Urates; and the most external layer consists of Phosphate of Calcium.

The patient had suffered from difficulty in micturition and other symptoms of stone from his earliest childhood; and he stated that it was known that he had a stone when 5 years old. His prepuce was removed when he was 2½ years old, on account of redundancy and irritation.

58. Calculus, the superficial layers of which are composed of Uric Acid with traces of Urates; the middle layers of Uric Acid with traces of Phosphate of Magnesia, and the nucleus of Uric Acid and Phosphate of Lime.

59. Calculus of mixed composition. The outer layer is Phosphate of Lime; the middle, Uric Acid, Phosphate, and Oxalate of Lime, and the nucleus of Phosphate of Lime. The upper calculus (which was removed at the same time from the same patient) has also three principal layers, of which the outermost is composed of Phosphate of Lime with Oxalate of Lime; the middle, of Uric Acid, and the nucleus of Uric Acid and Oxalate of Lime.

CALCULI OF WHICH THE NUCLEUS CONSISTS OF URATE OF AMMONIA.

CALCULI CONSISTING MAINLY OF URATE OF AMMONIA.

60. Sections of a Calculus. Urate of Ammonia.

From the bladder of a boy. Lithotomy by Mr. Stanley.

61. Sections of a Calculus. Urate of Ammonia with some Phosphate and Oxalate of Lime. The external portion contains more earthy matter than the internal.

From the bladder of a boy 5 years old. Lithotomy by Mr. Earle.

62. Fragments of a Calculus. Urate of Ammonia mixed with Phosphate of Ammonia and Magnesia, and Phosphate of Lime. Fifteen grains yielded on analysis—

Uric Acid	9 grains
Phosphate of Lime	1·5 „
Phosphate of Ammonia and Magnesia ..	3·1 „
Ammonia and animal matter	1·4 „
	15·0 „

From the bladder. Lithotomy by Sir Wm. Lawrence.

63. Portion of a Calculus. Urate of Ammonia with a comparatively large quantity of Phosphate and Oxalate of Lime, and a little Uric Acid; and crystals of Phosphate of Ammonia and Magnesia between the layers.

From the bladder of a boy 7 years old. Lithotomy by Mr. Earle.

64. Sections of a small Calculus. Urate of Ammonia.

From the urethra of a boy.

65. Sections of a Calculus. Urate of Ammonia with Oxalate and Phosphate of Lime.

From the bladder of a child 2½ years old. Lithotomy by Mr. Earle.

66. Sections of a Calculus. Urate of Ammonia with about six per cent. of the Fusible Calculus.

From the bladder of a boy 5 years old. Lithotomy by Mr. Vincent.

67. Calculus. Urate of Ammonia.

From the bladder of a boy 3 years old. Lithotomy by Mr. Stanley.

68. Sections of a Calculus. Urate of Ammonia with a little Oxalate of Lime; a small quantity of Phosphates forms the exterior.

From the bladder of a boy 10 years old. Lithotomy by Mr. Stanley.

CALCULI HAVING TWO LAYERS.

URATE OF AMMONIA. URIC ACID.

69. Sections of a Calculus. Nucleus, Urate of Ammonia; outer portion, nearly pure Uric Acid.

From the bladder of a boy 10 years old. Lithotomy by Mr. Vincent.

70. Sections of a Calculus. Nucleus, Urate of Ammonia with a little earthy matter; surrounded by pure and very compact Uric Acid.

From the bladder of a boy 7 years old. Lithotomy by Mr. Earle.

URATE OF AMMONIA. OXALATE OF LIME.

71. Sections of a Calculus. Nucleus, Urate of Ammonia with Oxalate of Lime, surrounded by Oxalate of Lime.

From the bladder of a young woman. Lithotomy by Mr. Earle.

72. Sections of a Calculus. Nucleus, Urate of Ammonia with Oxalate of Lime; surrounded by Oxalate of Lime and a small quantity of the Phosphates.

From the bladder of a child 7 years old, with rickets and diseased bladder. Lithotomy by Mr. Earle.

73. Section of a Calculus. Urate of Ammonia with a little Oxalate of Lime.

74. Sections of three Calculi. Central portion, Urate of Ammonia, Oxalate of Lime and Phosphates; external part, Oxalate of Lime. Analysis by Dr. Huc.

From the bladder. Lithotomy by Sir Wm. Lawrence.

75. Sections of a Calculus. Nucleus, Urate of Ammonia with Oxalate of Lime; surrounded by a mixture of the same with the Phosphates.

From a boy 3½ years old. Lithotomy by Mr. Stanley.

76. Two small Calculi. Nucleus, Urate of Ammonia with a little Oxalate of Lime, surrounded by a thin layer of pure Oxalate of Lime.

From the bladder of a boy. Lithotomy by Sir Wm. Lawrence.

77. A Calculus consisting of alternate layers of Urate of Ammonia containing Oxalate of Lime, and of pure Oxalate of Lime.

From the bladder of a child 2½ years old. Lithotomy by Mr. Earle.

78. Fragments of a Calculus. Nucleus, Urate of Ammonia with Oxalate of Lime; surrounding portion, Oxalate of Lime.

From the bladder of a boy 2¾ years old. Lithotomy by Mr. Vincent.

URATE OF AMMONIA. EARTHY PHOSPHATES.

79. Sections of a Calculus from the Bladder of a child. Nucleus, Urate of Ammonia; surrounded by the Phosphates.

Lithotomy by Mr. Stanley.

80. Section of a Calculus. Nucleus, Urate of Ammonia; surrounded by the mixed Phosphates, in which are layers of the same kind as the nucleus.

From the bladder of a child. Lithotomy by Mr. Earle.

81. A Calculus weighing 820 grains. The nucleus is composed of Urate of Ammonia, with a considerable quantity of Calcium and Mixed Phosphates; the outer layer of Calcium Phosphate, with a little Mixed Phosphates and Uric Acid.

Removed by lateral lithotomy from the bladder of a boy, aged 12 years, who had long suffered from symptoms of stone. He recovered from the operation.—See *Rahere Ward Book*, vol. vi, p. 281.

82. Section of a Calculus. Nucleus, Urate of Ammonia with earthy matter; external part, principally the Phosphates.

83. Section of a Calculus consisting probably of Urate of Ammonia in the centre, and earthy Phosphates towards its surface.

Removed from a native of India, and presented by Surgeon-Major Trestraill.

84. Section of a Calculus. Urate of Ammonia surrounded by the Mixed Phosphates.

85. Calculus. Nucleus, Urate of Ammonia: exterior fusible, with a large portion of animal matter.

From the bladder of a boy aged 12. Lithotomy by Mr. Abbott.

86. Sections of a Calculus. Internal portion, Urate and Purpurate of Ammonia with the mixed Phosphates; external portion, mixed Phosphates, easily fused.

From the bladder of a boy 2½ years old. Lithotomy by Mr. Vincent.

87. Section of a Calculus. Nucleus, Urate of Ammonia with a little earthy matter; surrounded by the mixed Phosphates.

From the bladder of a boy 8 years old. Lithotomy by Mr. Earle.

88. Section of a Calculus. Nucleus, Urate of Ammonia; the rest, Urate of Ammonia alternating with the mixed Phosphates.

From the bladder of a boy 4 years old. Lithotomy by Mr. Earle.

89. Sections of a Calculus. Urate of Ammonia with about one-twentieth of

Oxalate of Lime and some Phosphate of Lime; externally, mixed Phosphates with a little Urate of Ammonia.

From the bladder of a boy 5½ years old. Lithotomy by Mr. Earle.

90. Sections of a Calculus. Nucleus, Urate of Ammonia with some Phosphate and Oxalate of Lime; coated by the Fusible Calculus.

From the bladder of a boy 8 years old. Lithotomy by Mr. Vincent.

91. Section of a Calculus. Nucleus, Urate of Ammonia with a little Oxalate of Lime; externally, the Phosphates.

From the bladder of a child 4 years old. Lithotomy by Mr. Earle.

92. Sections of a Calculus. Impure Urate of Ammonia, surrounded by a layer of the Phosphates.

93. Section of a Calculus. Mixed Phosphates with thin layers of Urate of Ammonia.

This specimen was presented by the Council of the Royal College of Surgeons of England.

CALCULI HAVING THREE LAYERS.

URATE OF AMMONIA. URIC ACID. EARTHY PHOSPHATES.

94. Section of a Calculus. Nucleus, Urate of Ammonia with Oxalate of Lime; surrounded by impure Uric Acid containing some layers of Oxalate of Lime; coated by the Fusible Calculus.

From the bladder of a man 27 years old. Lithotomy by Mr. Earle.

URATE OF AMMONIA. OXALATE OF LIME. EARTHY PHOSPHATES.

95. Sections of a Calculus. Nucleus, Urate of Ammonia with a little Oxalate of Lime, surrounded by pure Oxalate of Lime; the whole coated by the mixed Phosphates.

From the bladder of a man. Lithotomy by Sir James Earle.

96. Section of a Calculus. Nucleus, Urate of Ammonia with Oxalate of Lime; surrounded by Oxalate of Lime, and coated by the Phosphates.

From the bladder of a boy 10 years old. Lithotomy by Mr. Vincent.

97. Sections of a Calculus. Nucleus, chiefly Urate of Ammonia, with a little Oxalate of Lime; coated by Oxalate of Lime; and externally by the Phosphates.

From the bladder. Lithotomy by Sir Wm. Lawrence.

98. Sections of a Calculus. Nucleus, Urate of Ammonia with a small quantity of Oxalate of Lime; the next layer, Oxalate of Lime; coated by the mixed Phosphates.

From the bladder. Lithotomy by Sir Wm. Lawrence.

99. Sections of a Calculus. Greater portion, Oxalate of Lime, coated by the mixed Phosphates: central portion, Urate of Ammonia.

From the bladder of a boy 12 years old. Lithotomy by Mr. Vincent.

100. Sections of a Calculus. Nucleus, Urate of Ammonia; next, Oxalate of Lime and Phosphates; lastly, pure Phosphates.

From the bladder of a boy. Lithotomy by Sir Wm. Lawrence.

101. Sections of a Calculus. Urate of Ammonia surrounded by Oxalate of Lime, and coated with Fusible Calculus, which forms at one part a thick mass.

From the bladder of a child 6 years old. Lithotomy by Sir Wm. Lawrence.

102. Sections of a Calculus. Urate of Ammonia with Urate and Oxalate of Lime; around this crystallised Oxalate of Lime: the whole coated by a mixture of Phosphate and Carbonate of Lime with traces of Uric Acid.

From the bladder of a boy 10 years old. Lithotomy by Mr. Stanley.

103. Sections of a Calculus. Nucleus, Urate of Ammonia with a trace of earthy matter; surrounding lighter portion, Oxalate of Lime with a little Uric Acid; the rest, Oxalate of Lime with animal matter alone. Mixed Phosphates adhere externally in detached portions.

From the bladder of a man 35 years old. Lithotomy by Mr. Earle.

104. Section of a Calculus. Nucleus, Urate of Ammonia with Oxalate of Lime; next layer, Oxalate of Lime; externally, principally the Fusible Calculus.

105. Section of a large Calculus. Oxalate of Lime, surrounded by the mixed Phosphates, containing much animal matter and some Uric Acid. Nucleus, Urate of Ammonia with Oxalate of Lime.

From the bladder of a man 26 years old. Lithotomy by Mr. Earle.

106. Sections of a large Calculus. Oxalate of Lime, coated by the mixed Phosphates. Nucleus, Urate of Ammonia containing Oxalate of Lime.

From the bladder of a lad 17 years old. Lithotomy by Mr. Vincent. The bladder and kidneys of the patient from whom this calculus was removed are preserved in Series XXIX, No. 2444.

107. Sections of a Calculus. Nucleus, Urate of Ammonia, surrounded by Oxalate of Lime and a little Urate of Ammonia; coated by the mixed Phosphates.

From the bladder of a boy. Lithotomy by Sir Wm. Lawrence.

URATE OF AMMONIA SUCCEEDED BY FOUR OR MORE LAYERS.

108. Sections of a large Calculus. Central portion, Urate of Ammonia. Next layer, Oxalate of Lime. Third layer, looser in texture, Fusible Calculus. Fourth or outermost layer, Urate of Ammonia, with, possibly, a very small portion of Oxalate of Lime. Analysis by Dr. Hue.

From the bladder of a man 36 years old. Lithotomy by Mr. Abbott.

109. Sections of a large Calculus. Central portion, Urate of Ammonia with Oxalate of Lime, surrounded by Oxalate of Lime; next, Uric Acid nearly pure; a thin layer of the Fusible Calculus coats the whole.

Taken from the bladder after death. Weight five ounces, five scruples, one grain.

110. Sections of a Calculus. Nucleus (the long axis of which is perpendicular to the axis of the calculus), Urate of Ammonia with a little Oxalate of Lime; surrounding portion, Urate of Ammonia with the mixed Phosphates; the remainder, mixed Phosphates with a little Uric Acid.

From the bladder of a boy 1 year and 10 months old. Lithotomy by Mr. Vincent.

111. Section of a Calculus. Nucleus, Urate of Ammonia with Oxalate of Lime, surrounded by Oxalate of Lime; the remainder may be divided into three

portions—the inner one consisting of Phosphate of Lime with Phosphate of Ammonia and Magnesia, and a little Carbonate of Lime; the middle, which is much harder in texture and more compact, of Phosphate of Lime and Carbonate of Lime; and the outer, of Phosphate of Ammonia and Magnesia, and Phosphate of Lime.

From the bladder of a lad aged 17. Lithotomy by Mr. Earle.

112. Sections of a Calculus. Nucleus, Urate of Ammonia with some Lime; next, Oxalate of Lime; then, Uric Acid with a small quantity of the Phosphates; and lastly, a thin layer of Urate of Ammonia containing Oxalate and Phosphate of Lime, and coloured by Purpurate of Ammonia.

113. Section of a Calculus. Nucleus, Urate of Ammonia with a little Oxalate of Lime; around this, a ring of pure Oxalate of Lime; the remainder, Uric Acid with thin layers of Oxalate of Lime, coated by Urate of Ammonia and Oxalate of Lime.

From the bladder of a boy 9 years old. Lithotomy by Mr. Earle.

114. Sections of a Calculus. Nucleus, Urate of Ammonia with a little Oxalate of Lime; surrounded by a mixture of Urate of Ammonia, Oxalate of Lime, and a small quantity of the Phosphates; and, lastly, a layer of the Fusible Calculus.

From the bladder of a boy 10 years old. Lithotomy by Mr. Abbott.

115. Section of a Calculus. Nucleus, Urate of Ammonia, with Oxalate of Lime in alternate layers with the mixed Phosphates.

Passed spontaneously from the bladder of a girl 4 years old.

116. Section of a large Calculus. Nucleus, Urate of Ammonia, surrounded by Phosphate of Lime, and Phosphate of Magnesia and Ammonia.

117. Three large Calculi. Nucleus, Urate of Ammonia; remainder, Phosphate of Ammonia and Magnesia, with Phosphate of Lime and some Urate of Ammonia.

Removed from the bladder of a man after death.

Presented by J. F. Crookes, Esq.

CALCULI OF WHICH THE NUCLEUS CONSISTS OF OXALATE OF LIME.

CALCULI CONSISTING MAINLY OF OXALATE OF LIME.

118. Specimen of Mulberry Calculus, composed of Oxalate of Lime.

119. Section of an Oxalate of Lime Calculus, which was found, in the operation performed for its removal, attached by the end that is placed uppermost in the bottle, to the lining-membrane of the bladder. The subject of it was a native of India.

Presented by Surgeon-Major Trestraill.

120. Sections of a mulberry-like Calculus composed of Oxalate of Lime: the nucleus probably contains Urate of Ammonia.

From the bladder of a boy 11 years old. Lithotomy by Mr. Stanley.

121. Mulberry Calculus. Oxalate of Lime.

From the bladder of a boy 10 years old. Lithotomy by Mr. Vincent.

122. An Oxalate of Lime Calculus, weighing one ounce, one drachm, removed

from a boy, aged 13 years, by lateral lithotomy. The patient made a good recovery.

123. Section of a Calculus. Oxalate of Lime. Analysis by Dr. Hue.

124. Calculus. Oxalate of Lime.

From the bladder of a boy 13 years old. Lithotomy by Sir Wm. Lawrence.

125. Calculus of Oxalate of Lime.

Removed from the bladder of a boy aged 18 years.

126. Section of a Calculus. Oxalate of Lime; the exterior is composed of the same, crystallised.

127. Fragments of a large Calculus, mulberry-shaped, and chiefly formed of Oxalate of Lime, which were removed from the bladder of a girl 13 years old.

Signs of calculus had existed for twelve months. The removal of the calculus was attempted by dilatation of the urethra after division of its upper wall; but, after the removal of many fragments, broken off with the forceps, the larger part of the mass was left. The patient died with peritonitis six days after the operation.

The bladder is in Series XXIX, No. 2437.

128. A Calculus. Nearly pure Oxalate of Lime, in perfect crystals on the external surface.

From the bladder of a boy 2½ years old. Lithotomy by Sir Wm. Lawrence.

129. Calculus composed of pure Oxalate of Lime, which projects from the surface in the form of octohedral crystals.

130. Calculus of well marked mulberry-like form. Oxalate of Lime.

Presented by H. Earle, Esq.

131. Sections of a Calculus composed of Oxalate of Lime. Some portions of the Calculus are of a peculiar golden hue; they contain Urate of Ammonia.

132. Calculus composed of Oxalate of Lime. Crystals of pure white Oxalate of Lime are deposited on brown tuberculated Oxalate of Lime.

Passed from the bladder of an old man.

Presented by John Goldsmith, Esq.

133. Section of a Calculus. Oxalate of Lime in layers of various structure.

134. Several Calculi, composed chiefly of Oxalate of Lime, which were removed after death from the bladder of an old man. They are irregular in form and rough on their surfaces; the largest of them is three-quarters of an inch in diameter.

135. A Calculus. Oxalate of Lime. Analysis by Dr. Hue.

From the urethra of a boy 8 years old.

136. A Calculus. Oxalate of Lime, with a little Uric Acid.

Extracted by Mr. Abbott from the urethra.

CALCULI HAVING TWO LAYERS.

OXALATE OF LIME. URIC ACID.

137. A Calculus, removed from the bladder of a man. The great mass of the calculus is Uric Acid; it contains, however, traces of Phosphate, and of Oxalate of Lime. The centre is Oxalate of Lime, with a small quantity of Uric Acid. The whole is composed of Oxalate of Lime 5 parts, Uric Acid 95 parts, = 100.

138. Section of a Calculus. Uric Acid upon a Nucleus of Oxalate of Lime. Analysis by Dr. Hue.

From the bladder of a boy 9 years old. Presented by H. Earle, Esq.

139. Section of a Calculus. Uric Acid upon a Nucleus of Oxalate of Lime. Analysis by Dr. Hue.

From the bladder of a boy 7 years old. Lithotomy by Mr. Earle.

140. Sections of a Calculus. Oxalate of Lime, surrounded by Uric Acid.

From the bladder of a boy 8 years old. Lithotomy by Mr. Wormald.

OXALATE OF LIME. URATE OF AMMONIA.

141. Section of a Calculus. Nucleus, Oxalate of Lime; the external strata Urate of Ammonia with a little Phosphate and Oxalate of Lime.

OXALATE OF LIME. EARTHY PHOSPHATES.

142. Section of a Calculus removed from a woman, aged 44 years, through the Urethra, which was previously rapidly dilated. Symptoms of stone had existed for four or five months previously. She rapidly recovered the power of retaining the urine, and soon left the Hospital quite well. The central portion is composed of Oxalate of Lime, the white circumferential layer of Phosphates.

143. Section of a Calculus. Nucleus, Oxalate of Lime, with a deposition of the Fusible Calculus. Analysis by Dr. Hue.

From the bladder of a boy 10 years old. Lithotomy by Mr. Vincent.

144. Section of a Calculus. Nucleus, Oxalate of Lime; with a crust of the Fusible Calculus. Analysis by Dr. Hue.

From the bladder of a boy 10 years old. Lithotomy by Mr. Vincent.

145. Sections of a Calculus. Nucleus, Oxalate of Lime; outer white layer, the Phosphates.

From a young man. Lithotomy by Sir Wm. Lawrence.

146. Section of a Calculus. Nucleus, Oxalate of Lime; surrounded by the Fusible Calculus. Analysis by Dr. Hue.

From the bladder of a female. Lithotomy by Mr. Stanley.

147. Section of a Calculus. Nucleus, Oxalate of Lime; with a crust of the Fusible Calculus. Analysis by Dr. Hue.

148. A Calculus. Nucleus, Oxalate of Lime; with a crust of the Fusible Calculus. Analysis by Dr. Hue.

From the bladder of a lad 16½ years old. Lithotomy by Mr. Vincent.

149. A Calculus. Oxalate of Lime, projecting in nodules and sharp points, and surrounded by the Phosphates.

150. Fragments of a Calculus. Nucleus, Oxalate of Lime (apparently) surrounded by the mixed Phosphates.

From the bladder of a man 40 years old. Lithotomy by Mr. Vincent.

151. Portions of a Calculus. Oxalate of Lime surrounded by the mixed Phosphates.

From the bladder of a boy 9 years old. Lithotomy by Mr. Skey.

152. Oxalate of Lime Calculus, with, apparently, Phosphates on its surface.

153. Calculus. Nucleus, Oxalate of Lime; coated by crystals of Phosphate of Ammonia and Magnesia.

From the bladder of a lad 18 years old. Lithotomy by Mr. Abbott.

154. Sections of a Calculus. Nucleus, Oxalate of Lime; with a crust of the Fusible Calculus. Analysis by Dr. Hue.

From the bladder of a boy 6 years old. Lithotomy by Mr. Vincent.

155. Sections of a Calculus. Nucleus, Oxalate of Lime; surrounded by the Phosphates.

From the bladder of a boy 7 years old. Lithotomy by Mr. Stanley.

156. Sections of a Calculus. Central portion, Oxalate of Lime with a little Uric Acid; around it, Oxalate of Lime; imperfectly coated by the Phosphates of Ammonia and Magnesia.

Lithotomy by W. Hill, Esq.

157. A Calculus. Nucleus, Oxalate of Lime; the Phosphates forming the external layer. Analysis by Dr. Hue.

From the bladder of a child 7½ years old. Lithotomy by Mr. Earle.

158. A Calculus. Nucleus, Oxalate of Lime; surrounded by the Fusible Calculus. Analysis by Dr. Hue.

From the bladder. Lithotomy by Sir Wm. Lawrence.

158a. A Calculus, composed at its centre of Oxalate of Lime and Urate of Ammonia. The thin dark rings contain Oxalate of Lime; the intermediate mass is formed of Phosphate of Lime and Ammonia, Phosphate of Magnesia, with variable proportions of Carbonate of Lime.

CALCULI HAVING THREE LAYERS.

OXALATE OF LIME. URIC ACID. URATE OF AMMONIA.

159. Section of a Calculus. Oxalate of Lime internally, with an external stratum of impure Uric Acid; a thin layer of Urate of Ammonia with Oxalate of Lime coating the whole.

Extracted by Mr. Earle from the bladder of a female by dilatation of the urethra.

OXALATE OF LIME. URIC ACID. OXALATE OF LIME.

160. Sections of a Calculus. Nucleus, Oxalate of Lime; surrounded by Uric Acid, with veins of Oxalate of Lime; outer coat, pure Oxalate of Lime.

OXALATE OF LIME. URIC ACID. EARTHY PHOSPHATES.

161. Three layers exist in this Calculus. The outer is composed of Phosphate of Magnesia and Ammonia, the middle of Uric Acid, and the nucleus of Oxalate of Lime.

OXALATE OF LIME SUCCEEDED BY FOUR OR MORE LAYERS.

162. Sections of a large Calculus. Central portion, Oxalate of Lime: white layer surrounding it, Oxalate of Lime, Urate of Ammonia and Phosphates; remainder, Uric Acid, nearly pure: a thin layer of Urate of Ammonia, containing a little Oxalate and Phosphate of Lime, surrounds the whole.

From the bladder of a man. Lithotomy by Sir Wm. Lawrence.

163. Sections of a large Calculus. Nucleus, Oxalate of Lime; surrounded by thick alternate layers of Uric Acid and Oxalate of Lime; and coated by a thick layer of Phosphate of Ammonia and Magnesia.

Presented by E. A. Lloyd, Esq.

164. Sections of a Calculus. Nucleus and surrounding portion, Oxalate of Lime, containing a little Urate of Ammonia, surrounded by Phosphate of Lime with a little Phosphate of Ammonia and Magnesia; the darker band within this is pure Phosphate of Lime, and exhibits the radiated structure described by Dr. Wollaston.

From the bladder of a boy 8 years old. Lithotomy by Mr. Vincent.

165. Sections of a Calculus. Nucleus and central portion, Oxalate of Lime, and Urate of Ammonia, with a little of the Phosphates; then follows, chiefly Oxalate of Lime; externally is a mixture of the Oxalate of Lime and Urate of Ammonia, with some Phosphates. Analysis by Dr. Hue.

From the bladder. Lithotomy by Sir Wm. Lawrence.

CALCULI CONSISTING OF CYSTIC OXIDE (CYSTINE).

166. One-half of a Cystic Oxide Calculus removed from a boy, aged 14 years. It weighed one ounce, seven drachms. Symptoms of irritation of the urinary organs had existed from earliest childhood, and had been extremely severe for the last eighteen months. The urine was always copious, clear, and pale, never containing blood or any large quantity of mucus.

167. The half of a large kidney-shaped Cystic Oxide Calculus. The surface is beaded, and presents the usual waxy appearance. The entire stone weighed 820 grains. It measures $2\frac{1}{5}$ inches in length, $1\frac{1}{2}$ inches in breadth, and 1 inch in thickness.

The calculus was removed from an extremely emaciated girl, aged 17 years, an idiot. For two years and a half she had suffered severely from symptoms of vesical irritation.

She died a few days afterwards from advanced phthisis.

168. The half of a large Cystic Oxide Calculus, with a nodulated and apparently crystallised surface. The calculus weighed 740 grains. Its specific gravity is 1·13. It measures $1\frac{9}{10}$ inch through its long axis; and $1\frac{1}{5}$ and $1\frac{1}{10}$ through its respective shorter axes. 10 grains gave on analysis—

Cystic Oxide	9·1
Phosphate of Lime	0·38
Phosphate of Ammonia and Magnesia ..	0·1
Animal matter and loss	0·42
	10·00

The calculus was taken after death from the bladder of a man 21 years old. He died with inflammation of the bladder, ureters, and kidneys. The other half of the calculus is in the Museum of the Royal College of Surgeons of England, D. 1.

169. Section of a Cystic Oxide Calculus coated, in parts, by the mixed Phosphates. Weight, 155 grains.

Vide No. 213.

CALCULI CONSISTING OF PHOSPHATE OF LIME.

170. Thirty-one faceted Calculi, composed of Phosphate of Lime: they were removed from the bladder of a Hindoo peasant by lateral lithotomy, performed by Dr. J. Wise, of Dacca, Bengal. The patient recovered.

See an account of the case by Mr. T. Smith, in the *Transactions of the Pathological Society*, 1870.

171. Calculus composed of Phosphate of Lime, which was removed from the patient to whom No. 2 belonged, at a subsequent operation.

172. Two Phosphatic Calculi, one cubical the other triangular. One facet on each calculus is smooth and polished by attrition against the other, to which the peculiar shape of the calculi is due. The other facets are covered by granular phosphates. The calculi consisted for the most part of phosphate of calcium, with a small proportion of triple phosphate; they were not fusible.

They were taken after death from a man, aged 66 years, who had suffered from symptoms of stone for nine years.

He died from pyo-nephritis.

Vide Nos. 214, 215, 218, 219.

Presented by Mark H. H. Vernon, Esq.

CALCULI COMPOSED OF PHOSPHATE OF MAGNESIA AND AMMONIA.

173. A large Calculus, composed entirely of Ammonio-Magnesium Phosphate.

From a Hindoo.

173a. Section of a Calculus having the appearance of mortar, composed of Phosphate of Magnesia and Ammonia.

174. Calculus, composed of regularly crystallised Triple Phosphate, upon, probably, a nucleus of Uric Acid. Analysis by Dr. Hue.

Vide Nos. 212, 227.

CALCULI COMPOSED OF PHOSPHATE OF LIME AND PHOSPHATE OF MAGNESIA AND AMMONIA (FUSIBLE CALCULUS).

175. Sections of a Calculus, composed of mixed Phosphates; the dark veins in it probably Urate of Ammonia. The form of the Calculus and the arrangement of its veins appear to indicate that it is composed of two Calculi united at their borders.

From the bladder of a man 54 years old. Lithotomy by Mr. Vincent.

176. A section of a Calculus, composed of Calcium Phosphate and Ammonio-Magnesium Phosphate, the former being in a larger proportion; it contains no Uric Acid.

From a Hindoo.

177. A section of a large Calculus, composed throughout of Calcium Phosphate and Ammonio-Magnesium Phosphate; it was only slightly fusible.

178. Twelve polyhedral Calculi. Fusible, with a comparatively large proportion of Phosphate of Lime, and a small portion of Uric Acid. Analysed by Dr. Hue.

179. Numerous Calculi with flattened surfaces. Phosphate of Ammonia and Magnesia, a little Phosphate of Lime, and some Urate of Ammonia.

Taken after death, from the bladder of a middle-aged man.

Presented by T. Smith, Esq.

180. Three Calculi, consisting of a mixture of Ammonio-Magnesium Phosphate and Calcium Phosphate; removed after death from a boy, aged 8 years. The two largest were found in the bladder, and the smallest with three other small stones, in the pelvis of the left kidney. The left ureter was extremely dilated.

Presented by J. H. Tarleton, Esq.

181. Sections of a Calculus. Mixed Phosphates, with animal matter and a little Uric Acid; the grey veins in it, Urate of Ammonia.

From the bladder of a man after death. The bladder is preserved in Series XXIX, No. 2433.

182. Sections of a Calculus, composed of mixed Phosphates with Uric Acid, Urate of Ammonia and animal matter.

183. Section of a Calculus. The white portion is composed of Fusible Calculus. The grey layers of Urate of Ammonia and animal matter.

184. Fragments of a Calculus, composed of Phosphate of Lime, with a small portion of Phosphate of Magnesia and Ammonia, slightly fusible. Analysis by Dr. Hue.

From the bladder of a man 37 years old. Lithotomy by Mr. Vincent.

185. Fragments of Calculus. Phosphate of Ammonia and Magnesia with Phosphate of Lime; and small quantities of Carbonate of Lime and Urate of Ammonia. It contains small particles of a bright red colour, the nature of which is uncertain.

From the bladder of a man 30 years old. Lithotomy by Mr. Stanley.

186. Calculous Matter, consisting chiefly of the Phosphates, removed after death from the bladder of a man, aged 39.

The patient, a sailor, had retention, followed by extravasation of urine four years before death. Fistulous openings in the perineum remained, and signs of the existence of calculus ensued about a year before death.

Presented by H. Snowden, Esq.

187. Urinary Calculus, from a boy aged 10 years. It is composed of Calcium Phosphate and Carbonate, with a little Phosphate of Magnesia and Ammonia. The peculiar shape of the concretion appears to be due to the union of two oval Calculi at their ends.

188. Calculi removed from the bladder and urethra of an elderly gentleman. The upper calculus filled the membranous and bulbous portions of the urethra; the lower, which has been divided, was in the bladder. The external crust of the stone

from the bladder consists principally of the Phosphates (especially Phosphate of Lime) and some Carbonate of Lime and animal matter. The stone from the urethra consists of the same materials with a larger proportion of the Carbonate of Lime, and some Oxalate of Lime. Analysis by Dr. Prout.

Vide also Phosphatic Deposit upon Foreign Bodies.

CALCULI DEPOSITED ON FOREIGN BODIES.

URATE OF AMMONIA.

189. Parts of a Gutta-percha Bougie, about five inches in length, encrusted with deposits of Urate of Ammonia, ejected from a man's urinary bladder, after being broken into several pieces by lithotrity.

Whilst this instrument was being passed, twenty-seven days prior to its removal, it broke between four and five inches from the distal extremity, the fragment being left in the urethra. Its removal was at once attempted by cutting into the urethra through the perineum, but a spasmodic action of the membranous portion ensued, and the whole fragment was drawn into the bladder. It there lay across the neck, was readily reached by the lithotrite, turned, and an effort made to withdraw it; subsequently it was broken into several pieces, portions removed between the blades of the instrument, and the remainder expelled with a violent rush of urine in two acts.

The case is fully related by Mr. Holmes Coote, in the *Medical Times and Gazette*, February 20, 1858.

EARTHY PHOSPHATES.

190. Sections of a Calculus, composed of Triple Phosphate, with Phosphate of Lime, deposited around a piece of the stilet of a catheter which is bent in the form of a hook.

From the bladder of a man. Lithotomy by Sir Wm. Lawrence.

191. A mass of Calcareous matter, consisting of the mixed Phosphates, deposited on a portion of a Bougie.

This specimen was presented by the Council of the Royal College of Surgeons of England.

192. Fusible Calculous Matter deposited around a piece of paper which had been passed into the urethra of a female.

193. Fragments of a Calculus, composed principally, according to the analysis of Dr. Prout, of the mixed Phosphates.

They were removed from the bladder of a female by Mr. Stanley. There are also in the bottle several hairs, with calculous matter upon them, which were passed with the urine of the same patient.

194. Portion of Sealing Wax which had been introduced into the bladder three years prior to its extraction. It is almost entirely encrusted with calculous matter.

195. A Hair Pin, which became the nucleus of a Phosphatic Calculus, removed from the bladder of a girl, aged 17 years. She had passed it into the bladder two months previously, elbow first, and being unable to remove it, had continued her usual occupation, until the symptoms of stone in the bladder compelled her to seek relief.

The stone was removed by Mr. Holden through the urethra, with only slight injury to the soft parts, which in a few days regained their normal condition.

196. A portion of India-rubber Drainage Tube, about four inches in length, covered with Phosphates; it was removed by lateral lithotomy from the bladder of a man, aged 40 years, who, about one year before, had undergone the operation of external urethrotomy.

See *Harley Ward Book*, vol. vii, p. 17.

197. A Phosphatic Calculus formed upon a portion of a Bougie, which had broken off in the bladder.

CALCULI SPONTANEOUSLY BROKEN IN THE BLADDER.

198. Calculi broken into several portions, which were found after death in the bladder of an old man. They had broken spontaneously, and appear to have been parts of several large calculi; the edges of many of the fragments are rounded by mutual friction. They consist of Uric Acid, with a few layers of Urate of Ammonia.

The patient was 81 years old, and had suffered for more than a year with signs of stone in the bladder. He would not allow an instrument to be passed, but on two occasions in the nine months previous to his death, he obtained great relief from the use of alkaline medicines.

Presented by J. F. Harding, Esq.

199. Fragments of Calculi, chiefly impure Uric Acid. They were passed from the bladder of an old man, and appear to be portions of one or more calculi broken up spontaneously.

Presented by John Goss, Esq.

200. Calculi. Urate of Ammonia and Oxalate of Lime in alternate layers.

From the bladder of a boy 10 years old. Lithotomy by Mr. Stanley. The smaller portion was found loose in the bladder, and from the smoothness of its surface it may be presumed to have been spontaneously separated a considerable time before the operation, from that part of the larger calculus on which an excavation is now visible.

Vide also No. 226.

CALCULI FROM THE KIDNEY.

201. A small bright yellow granulated Calculus, of Uric Acid.

Removed after death from the kidney of a man about 40 years old, who died with an enlarged spleen, and shortly before death had passed a large quantity of Uric Acid with his urine.

202. Three small Calculi passed from the kidney; they are composed of Uric Acid.

203. A Renal Calculus composed of Uric Acid, and weighing 140 grains, taken from the right kidney of a lady, who died of suppurative nephritis.

204. Renal Calculi. Uric Acid with small portions of Oxalate of Lime.

Presented by E. A. Lloyd, Esq.

205. Small Renal Calculus about the size of a grain of wheat, which was passed from the urethra of a man, aged 38 years, who came to the Hospital Surgery with an attack of Renal colic. He had just been doing some heavy pushing work. The pain subsided after a hot bath, and on the fifth day after the colic he passed the calculus with his urine; it caused no uneasiness in passing along the urethra, and would not have been noticed unless looked for.

206. Calculus from the pelvis of the kidney of a child five months old. Uric Acid with Urate of Ammonia.

The other kidney, with a similar calculus, is in Series XXVIII, No. 2344.

Presented by Dr. West.

207. Calculi removed after death from a boy 8 years old. The larger calculus was situated in the right ureter near the bladder: the smaller portions were situated in the pelvis and infundibula of the right kidney. The larger calculus is composed of Urate of Ammonia with a trace of Uric Acid.

Lithotomy had been performed a fortnight before death. The kidneys were both very much dilated, and their pelves and calyces were filled with pus.

208. Calculus composed of Urates coated with Phosphates and fragments, removed during life from the kidney of a woman, aged 44 years.

. See *St. Bartholomew's Hospital Reports*, vol. ix, 1873.

209. An Oxalate of Lime Calculus removed by the operation of Nephro-lithotomy. It presents the extremely rough and spiculated surface characteristic of such calculi.

The patient was a young man, aged 20. At the age of 5 years he had suffered from hæmaturia, but not since. For the past ten years there had been intermittent pain in the right loin and testis, which for eighteen months had been very severe. While in the Hospital he had paroxysms of intense pain in the right testis, shooting downward from the region of the kidney, and followed by the discharge of a large quantity of urine containing oxalic acid. The calculus was felt close to the pelvis, and was easily removed after scratching through a thin layer of the kidney which covered it. The operation was performed by Mr. Butlin.—See *Pitcairn Ward Book*, vol. vii, p. 170.

210. A Renal Calculus taken from the body of a middle-aged lady, who died of scarlatina, and who, as a child, had frequently complained of pain in the back, and tenderness in the renal region; latterly these symptoms had been absent. The calculus consists of pure Oxalate of Lime of the crystalline and dumb-bell varieties.

211. Small Calculus passed from the kidney. Oxalate of Lime with crystals.

212. Renal Calculi from a man 38 years of age. In the right kidney were:—1. A great calculus, weighing $36\frac{1}{4}$ ounces. 2. About a thousand smaller calculi, nine of these larger than a cherry-stone, and weighing from 19 to 70 grains each; the rest of the calculi, larger than a millet seed, weighed together nearly 2 ounces. 3. A large quantity of calculous dust. In the left kidney were—1. A calculus weighing $9\frac{3}{4}$ ounces. 2. A quantity of calculous dust. The stones and gravel consisted chiefly of the Phosphate of Magnesia and Ammonia; in the largest stone there was a nucleus composed of Oxalate of Lime, with traces of Phosphate of Magnesia and Ammonia, Carbonate of Lime, and Uric Acid.

The kidneys are preserved in Series XXVIII, No. 2349.

The case is more fully described by Dr. S. Gee in the *Medico-Chirurgical Transactions*, vol. lvii, p. 77, 1881.

213. A Renal Calculus composed of Cystic Oxide, taken from a man. The bright shining particles on its surface consist of small plates of cholesterine.

214. Two lobed Calculi from a Kidney. Phosphate of Lime, with a large proportion of animal matter. Analysis by Dr. Hue.

215. Two large branched Calculi from the Kidneys. Phosphate of Lime with some Carbonate of Lime and a small quantity of Urate of Ammonia.

216. A similar Calculus, from a Kidney.

217. A large lobed and branched Calculus from a Kidney. Fusible Calculus coated by crystals of the Triple Phosphate.

218. Three similar Calculi from a Kidney. Phosphate of Lime, and a small portion of the Fusible Calculus. Analysis by Dr. Hue.

CALCULI FROM THE PROSTATE GLAND.

219. Numerous small round Calculi from the Prostate Gland, composed of Phosphate of Lime. Analysis by Dr. Hue.

CALCULI FROM FISTULÆ, OR CYSTS, COMMUNICATING WITH THE BLADDER OR URETHRA.

220. Section of a Calculus. Nucleus, Urate of Ammonia; surrounding portion, Oxalate of Lime, nearly pure; remainder, Uric Acid with a little Oxalate of Lime.

Extracted by Mr. Stanley from a cyst communicating with the urethra near the bladder of a boy 6 years old.

221. Part of 146 Calculi, removed from a sac connected with the middle of the spongy portion of the urethra. It was not certain whether the sac was formed by the urethra dilated behind the stricture which existed immediately in front of it; or was formed, after ulceration of the urethra, in the tissues around it. They are composed of Fusible Calculus with thin layers of Urate of Ammonia intermixed.

Operation by Mr. Vincent.

The patient was a man, 23 years old. He had been for ten years subject to incontinence of urine, the consequence of a kick, by which the urethra was ruptured or otherwise injured. He was in the habit of wearing a yoke to compress the anterior part of the urethra. Six years before the removal of the calculi he had bleeding from the urethra for several days, and then first perceived the swelling in the perineum, which from that time gradually increased with the increase of the calculi. The rest of the calculi are in the Museum of the Royal College of Surgeons of England.

222. A large Oval Calculus. Phosphate of Lime with Phosphate of Ammonia and Magnesia.

Extracted by Mr. Stanley from a cyst which communicated with a fistulous passage leading from the bladder to the perineum.

223. A Calculus taken from a Fistula remaining after the lateral operation of

lithotomy, which was performed eight years before the patient again came under observation. The calculus is composed for the most part of Phosphates, with a small quantity of Carbonate of Calcium and Magnesium.

From a male, aged 16 years.—See *Henry Ward Book*, vol. v, p. 204.

FRAGMENTS OF CALCULI PASSED AFTER LITHOTRITY.

224. Fragments of a Calculus weighing three ounces, twenty grains. Impure Uric Acid, probably surrounded by Oxalate of Lime and some Phosphate of Lime.

Passed from the bladder of a man after lithotrity by Mr. Stanley.

225. Fragments of Calculus. Impure Uric Acid.

From the bladder of a man 56 years old. Lithotrity by Mr. Stanley.

226. A large number of small round Calculi varying from the size of a shot to that of a pea, and a large quantity of fragments of these calculi, removed from the bladder in the operation of lithotrity by Bigelow's method. The whole weighs 1,350 grains. The calculi are composed for the most part of Urate of Ammonia, with some Uric Acid. Many of them have been fractured spontaneously.

Lithotrity by Mr. T. Smith.

227. Fragments of a Calculus which passed from a bladder through the urethra after the operation of lithotrity. Two, larger than the rest, are suspended by a wire; of these, the higher became impacted in the prostate gland, whence it was extracted. The calculus is composed of the triple Phosphate.

Vide Nos. 26 to 30, 189.

CALCULI REMOVED FROM, OR PASSED BY, THE URETHRA.

228. Section of a Calculus. Uric Acid, nearly pure.

From the urethra.

Presented by A. S. Abbott, Esq.

229. A Calculus. Urate of Ammonia, with a little Phosphate and Oxalate of Lime.

From the urethra of a female.

230. Portion of a Calculus. Oxalate of Lime. Analysis by Dr. Hue.

Extracted from the urethra of a boy by Mr. Vincent. A model of the entire calculus is placed beneath the portion of it.

231. Fragments of a Calculus. Nucleus, Oxalate of Lime; remainder, Uric Acid.

Passed from the urethra of a man 63 years old.

Presented by — Robinson, Esq.

232. A broken Calculus. The upper and smaller portion is from the urinary bladder, the lower and larger from the dilated prostatic urethra. The fracture resulted from the passage of a sound along the course of the urethra. The one portion was removed after incising the prostate by the ordinary lateral operation, the other after subsequent dilatation of the neck of the bladder.

In the progress of the case there merited attention, *a*. difficulty experienced in the introduc-

tion of an instrument; *b*. absence of the usual metallic ring until after the fracture had freed the smaller portion; *c*. rapid recovery from a complicated operation.

Presented by Dr. Frank Powell.

233. Calculus passed from the bladder of a man 27 years old.

234. A small Calculus of peculiarly irregular shape, passed per urethram by a middle-aged woman, who was subject to attacks of renal colic.

Presented by C. B. Gabb, Esq.

Vide Nos. 28, 31, 64, 115, 132, 135, 136.

CALCULI REMOVED FROM THE FEMALE BLADDER BY DILATATION OF THE URETHRA.

235. A Calculus which measures 1 inch and $\frac{3}{5}$ in length, 1 inch and $\frac{1}{5}$ in width, and 4 inches in its greatest transverse circumference. It was removed from the female bladder after rapid dilatation of urethra with the finger. The sphincter of the bladder remained unimpaired.

Presented by Mr. Rhind.

Vide Nos. 142, 159, 195.

CALCULI FROM ANIMALS.

236. Section of a large lobed Calculus, removed after death from the bladder of a Horse. Oxalate of Lime.

Presented by Thomas Jones, Esq.

237. Section of a Calculus passed from the bladder of a Mare, composed of Phosphate of Ammonia and Magnesia, with a small quantity of Phosphate of Lime.

Presented by Thomas Wormald, Esq.

238. Section of a very large Calculus from the bladder of a Horse. Principally Carbonate of Lime. It has a very compact, hard texture, like a piece of Bath stone.

Presented by F. Salmon, Esq.

239. Section of a large Calculus voided from the bladder of a Mare 5 years old.

Presented by the Council of the Royal College of Surgeons of England.

240. Small Calculi from the bladder of an Ox.

Presented by the Rev. G. Henslow.

241. Calculi from the bladder of a Dog. Internal part, Phosphate of Lime; external part, Phosphate of Lime and triple Phosphate.

242. A small Calculus from the bladder of a Rat.

SERIES LIII.

CALCULI AND OTHER CONCRETIONS FORMED IN THE DIGESTIVE ORGANS.

SALIVARY CALCULI.

OF MAN.

243. Two small Calculi from a Parotid Duct.

244. A Calculus from the Duct of the right Parotid Gland of a young gentleman, who had suffered for about two years with occasional attacks of inflammation attending difficult cutting of his wisdom tooth. Latterly, swelling of the cheek in the situation of the anterior portion of the parotid gland and Steno's duct had occurred during, and for some hours after meals, and had been attended with stiffness of the jaws and considerable pain. At length the calculus spontaneously escaped. It could then be felt that the whole duct was dilated; and that the surrounding tissues were indurated. The swelling described disappeared from this date.

Presented by Sir James Paget.

245. A very large Calculus removed from a woman's Submaxillary Duct. A portion of it was crushed in the extraction. When entire it measured an inch and a half in length, and a third of an inch in diameter. Its composition is Phosphate of Lime with animal matter, and a trace of Carbonate of Lime.

246. A Salivary Calculus, consisting of Phosphate and Carbonate of Calcium and Magnesium, removed from Wharton's Duct.

It was taken from a woman, aged 28 years. Eight years before she first noticed a small hard swelling in the floor of the mouth on the left side.

See *Lucas Ward Book*, vol. vi, p. 302.

247. A Salivary Calculus, consisting of Phosphate and Carbonate of Calcium and Magnesium.

248. Three Calculi, which were removed from the Submaxillary Duct.

Presented by Thomas Ilott, Esq.

249. A Salivary Calculus, occupying Wharton's Duct, found in the body of an aged woman brought to the dissecting rooms.

250. A Salivary Calculus removed from the duct of the Submaxillary Gland of a woman 29 years of age, who had been suffering for some weeks with a painful and inflamed condition of the under-part of the tongue. She could not tell how long the concretion had existed.

251. A Calculus from the Submaxillary Duct of an old man; the grandfather of the child from whom the following specimen was taken.

Presented by H. Hunt, Esq.

252. A minute Calculus, from the Submaxillary Duct of a child.

Presented by H. Hunt, Esq.

253. A Concretion removed from over the molar teeth of the upper jaw. It was attached on the teeth and gum by the part by which it is now fixed in position. It has an irregular conical form, measures one and a quarter inches in length, three-quarters of an inch in depth, and weighs 115 grains.

The patient was a married woman. The concretion was nearly six years increasing. It probably derived a great part of its materials from the saliva flowing out of the parotid duct, the orifice of which was opposite its apex.

Presented by T. Sympson, Esq.

OF THE LOWER ANIMALS.

254. A Calculus from the Salivary Duct of a Horse. It weighed seven ounces.

BILIARY CALCULI.

OF MAN.

255. Sections of a large Cholesterine Calculus from the Gall Bladder.

256. Calculus from the Gall Bladder, probably nearly pure Cholesterine.

257. A Calculus composed chiefly of Cholesterine with inspissated bile and coated with hardened fæces. It passed by an ulcerated opening from the gall bladder into the large intestine, where it became impacted and gave rise to fatal obstruction.

258. Calculi from the Gall Bladder. Composed principally of Cholesterine, the ashes containing a small quantity of Phosphate of Lime.

259. Calculi from the Gall Bladder. Composed of Cholesterine, with a small proportion of Phosphate of Lime.

260. Numerous small Cholesterine Calculi from the Gall Bladder.

261. Biliary Calculus taken from a Subject in the Dissecting Room. Composed apparently of Cholesterine.

262. Five large Biliary Calculi, which were mutually adapted by flat and slightly curved surfaces, and exactly filled the gall bladder. They are apparently composed of Cholesterine.

263. Calculi from the Gall Bladder. They are apparently composed largely of Cholesterine.

264. Three Biliary Calculi removed from the Gall Bladder of a lady, aged 82 years, who died of disease of the Heart.

Presented by H. E. Jackson, Esq.

265. Sections of a large Calculus from the Gall Bladder. Its fractured surface presents a brilliant crystallised appearance; and it is apparently composed of Cholesterine.

266. Calculus, probably from the Gall Bladder; apparently composed of Cholesterine.

It was passed, per anum, by a woman after a severe attack of intestinal inflammation, from which she completely recovered.

Presented by W. Hill, Esq.

267. Five Calculi from the Gall Bladder, in which they lay in a row with their adjacent surfaces flattened and adapted to each other. They are apparently composed of Cholesterine.

268. Numerous small black Calculi, with a resinous lustre, consisting of the colouring matter of the bile; from the Gall Bladder.

269. Minute black Calculi from the Gall Bladder, consisting of the colouring matter of the bile.

270. Calculi from the Gall Bladder.

271. Fifteen hundred small round Calculi from a Gall Bladder, composed of Cholesterine.

272. Several hundred (1180) Biliary Calculi, from a man who died in consequence of Erysipelas of the Head. There had been no symptoms of biliary colic.

273. Calculi from the Gall Bladder.

274. Three Biliary Calculi passed from the intestines after a severe attack of biliary colic.

Presented by Dr. Horace Jeaffreson.

275. Two Biliary Calculi passed from the intestines after a severe attack of biliary colic.

Presented by Dr. Horace Jeaffreson.

276. Calculi from the Gall Bladder. They present flattened surfaces, by which they were mutually adapted.

277. A collection of small, soft, brownish-yellow Calculi, from the Gall Bladder of a man who died with aneurism of the aorta.

278. Calculi from the Gall Bladder.

279. A Biliary Calculus, which was discharged after some slight inflammation and suppuration from the umbilicus.

The patient was a man, aged 50 years. He never had jaundice or other illness indicating the passage of a gall-stone through the ducts.

The case is related by Dr. Dyce Duckworth in the *Transactions of the Pathological Society*, 1870, 1871.

279a. Twelve Biliary Calculi of various sizes, extracted from an abscess at the umbilicus.

Vide also No. 2030, Series XVIII, and Nos. 2246 to 2250, 2257 to 2260, 2262 to 2264, in Series XXII.

BILIARY CALCULI.

OF THE LOWER ANIMALS.

280. Small Calculi from the Hepatic Duct of a Horse.

PANCREATIC CALCULI.

281. Twelve small round Calculi from a Pancreas.

Vide No. 2270, Series XXIII.

INTESTINAL CALCULI.

OF MAN.

282. Section of a large Concretion from the Human Intestines. It is chiefly composed of the Setae of oatmeal collected in a compact mass around a plum-stone. It caused death by obstruction of the intestinal canal.

Presented by the Council of the Royal College of Surgeons of England.

283. A Brass Pin, round the head of which is a disk-shaped mass of calculous matter, more than half an inch in diameter.

It was taken from the appendix of the cæcum of a man.

284. A mass of similar Calculous Matter deposited round a pin.

It was discharged from the rectum of a man, after great suffering.

Presented by Thomas Ilott, Esq.

285. A quantity of Earthy Matter in fine grains, like sand, discharged from the rectum.

OF THE LOWER ANIMALS.

286. An oval Hair Ball from an Ox.

Presented by the Council of the Royal College of Surgeons of England.

287. A Hair Ball from the Stomach of an Ox.

Presented by Rev. G. Henslow.

288. A Concretion taken from the Intestinal Canal of an Antelope, where it was found impacted with several others; hence its shape. It is composed of fine hairs matted together.

289. Section of a large Hair Ball.

290. Section of a Hair Ball.

291. A Hair Ball.

292. Portion of a Bezoar from the Intestines of some East Indian animal.

Presented by the Council of the Royal College of Surgeons of England.

293. Section of a Bezoar, composed chiefly of Pinic Acid. Its nucleus is a date stone. It was probably from the Intestines of one of the larger species of East Indian deer.

Presented by the Council of the Royal College of Surgeons of England.

294. Section of a Bezoar from an Elephant.

Presented by the Council of the Royal College of Surgeons of England.

295. Section of a Bezoar from a Rhinoceros.

Presented by the Council of the Royal College of Surgeons of England.

296. Section of a Calculus from the Intestines of a Horse. It is composed of Phosphate of Lime in concentric layers.

Presented by the Council of the Royal College of Surgeons of England.

297. A similar Specimen, but of a pyramidal form.

298. A spherical Calculus, which was removed after death from the Intestines of a Horse.

Presented by M. P. Lucas, Esq., late President of the Hospital.

299. Calculi found with many others, some very large, in the Intestines of a Horse.

Presented by Rev. G. Henslow.

SERIES LIV.

CONCRETIONS FROM THE CIRCULATORY, AND OTHER ORGANS.

300. A Collection of Phebolithes, or Calculi from Veins. Most of them are spherical; some are oval; they vary from half a line to half an inch in diameter: and some are laminated. They consist chiefly of Phosphate of Lime.

301. Twelve small round Calculi from a Spleen; formed probably in its Veins.

302. Two small earthy Concretions discharged by coughing.

Vide No. 3382, Series L.

SERIES LV.

PATHOLOGICAL MICROSCOPIC SPECIMENS.

DISEASES OF THE BONES.

ATROPHY.

1. Sections of a Rib and Femur extremely atrophied. From a case of cancer of the omentum.

INFLAMMATION.

2. Inflammation of the lower articular extremity of the Femur, from a case of inflammation of the knee joint.

3. Acute inflammation of the Tibia. The osseous tissue has been almost entirely absorbed.

From Specimen No. 574.

3a. Sclerosis of a human Fibula.

Presented by Dr. Hannover.

RICKETS.

4. Section through a Rib at the Costo-Chondral Junction. From a rickety child, aged $2\frac{1}{2}$ years.

From Specimen No. 270.

5. The lower end of the Radius from the same case.

MOLLITIES OSSIUM.

5a. Portion of a Skull from a patient who had Mollities Ossium. It is throughout of a porous spongy texture. The lacunæ are small and irregular, with few or no canaliculi.

SYPHILIS.

6. Longitudinal section through the lower epiphysis of the Femur of an infant presumed to have been affected with congenital syphilis.

The bones are preserved and described, No. 352.

7. Transverse sections of a Tibia, from the same case, thickened by osteophytes.

From Specimen No. 351.

8. Sections of the lower extremity of the Femur. From a child whose father had had constitutional syphilis.

The bones are preserved and described, No. 353.

N.B.—A fuller explanation of the microscopic appearances is in most instances given with the description of the specimens, from which many of the sections were taken.

All the slides with paper covers were prepared and presented by Mr. Walsham.

TUMOURS OF BONES.

OSTEOMATA.

8a. Section of a large ivory-like Osseous Tumour from the Orbit. In the hardest parts, on the surface, there are no Haversian canals, and the lacunæ are small, flattened, almost obliterated, and arranged parallel to the surface; most of them have no canaliculi. In the less hard parts the canals are very large, as are also the lacunæ, which are not arranged regularly in circles around them; and everywhere the lacunæ are of irregular or distorted forms.

Presented by Professor Clark. The tumour is in the Museum of the University of Cambridge.

A Drawing of the tumour is preserved, No. 15.

8b. Section of a similar tumour, removed from a girl's mastoid process. The lacunæ are perfectly formed, and very large; arranged in some parts closely, in some very widely apart. Where there are Haversian canals, there are generally a few lamellæ around them, and between these, lacunæ are placed, as in the normal state.

ENCHONDROMATA.

9. Enchondroma of a Femur.

From Specimen No. 418.

10. A similar Specimen.

From Specimen No. 423.

SARCOMATA.

11. A small round-cell Sarcoma of the Skull.

From Specimen No. 437.

12. A small round-cell Sarcoma of the Clavicle.

From Specimen No. 438.

13. A similar Specimen.

From Specimen No. 440.

14. A round-cell Sarcoma of a Humerus.

From Specimen No. 441.

15. The peripheral portion of a round-cell Sarcoma of a Femur, in places showing patches of calcification.

16. The central portion of the same tumour.

17. A small round-cell Sarcoma of the lower extremity of a Femur, in places calcified, and containing masses of hyaline and fibro-cartilage.

18. A spindle-cell Sarcoma of the lower Jaw.

From Specimen No. 442.

19. A similar Specimen taken from a tumour in the Neck, which recurred after the removal of the Jaw.

From Specimen No. 443.

20. A spindle-cell Sarcoma of the lower Jaw.

From Specimen No. 444.

21. A Tumour of the Femur, consisting of round cells and small spindle-cells. The round cells are in places enclosed in alveolar spaces, formed by spindle-cells.

From Specimen No. 447.

22. A spindle-cell Sarcoma of the lower part of a Femur.
From Specimen No. 448.

23. A spindle-cell Sarcoma of the lower half of a Femur, in great part ossified.
From Specimen No. 450.

24. A central Tumour of the lower extremity of a Femur, composed for the most part of spindle-cells, but containing in the centre a loose gelatinous connective tissue resembling mucous tissue. (*a*), is from the peripheral; (*b*), from the central portion of the tumour.
From Specimen No. 451.

25. A central spindle-cell Sarcoma of a Tibia.
From Specimen No. 453.

26. A peripheral spindle-cell Sarcoma of a Tibia, for the most part organized into an ill-developed form of connective tissue.
From Specimen No. 454.

27. A peripheral Sarcoma of the head of a Tibia, consisting of spindle and round-cells.

28. A spindle-cell Sarcoma of a lower Jaw, containing many myeloid cells.
From Specimen No. 460.

29. A similar Specimen.
From Specimen No. 461.

30. A central round-cell Sarcoma of a Humerus, containing myeloid cells.
From Specimen No. 462.

31. A recurrent spindle-cell Sarcoma of a Humerus, which formed, after the removal of a myeloid sarcoma.
From Specimen No. 463.

32. A myeloid Sarcoma of the lower extremity of a Femur, consisting for the most part of round-cells, intermixed with some spindle-cells, and containing abundance of myeloid cells.
From Specimen No. 465.

33. A myeloid Sarcoma of the lower extremity of a Femur, having a similar structure to the preceding, but containing much effused blood.
From Specimen No. 466.

34. A myeloid Sarcoma within the head of a Tibia, having a similar structure to the preceding.
From Specimen No. 468.

35. A similar specimen from the lower extremity of a Tibia.
From Specimen No. 472.

36. An ossifying Sarcoma of the Femur, consisting of a reticulum of homogeneous intercellular substance, containing small round-cells in its meshes. The section was taken through the point where the ossific matter was extending into the tumour.
From Specimen No. 474.

37. An osseous secondary growth in the Lymphatic Glands, taken from the same patient as the preceding, and presenting an exactly similar minute structure.
From Specimen No. 476.

38. An ossifying Sarcoma of the lower extremity of a Femur, having a similar structure to No. 36. The cellular elements are, however, more abundant.

From Specimen No. 477.

39. An ossifying Sarcoma of the lower extremity of a Femur; the section (*a*) taken from the circumference of the bone, consists of spindle cells; that within the bone (*b*) resembles the tumour described in No. 36.

From Specimen No. 481.

40. An ossifying Sarcoma, having essentially the same structure as Specimens Nos. 36 and 38, but intermixed with cartilage in places.

From Specimen No. 523.

CANCERS.

41. A medullary Cancer of the Frontal Bone. It consists of an alveolar stroma of fibrous tissue, enclosing epithelial-like cells, arranged in places like an epithelial lining around the walls of the alveoli.

From Specimen No. 495.

42. A medullary Cancer of the Ribs.

From Specimen No. 498.

43. A medullary Cancer of a Humerus.

From Specimen No. 500A.

44. A Tumour of the Arm, probably a medullary Cancer. After it had existed ten years, a tumour of the ilium made its appearance.

From Specimen No. 505.

45. A medullary Cancer of a Femur, secondary to a cancer of the Breast.

From Specimen No. 507.

46. Section of Bone from the interior of a medullary Tumour of a Femur. It is cancellous, but well formed and hard; its lacunæ and their canals are of normal appearance.

47. A medullary Cancer of a Tibia, probably secondary to a Pelvic Tumour.

From Specimen No. 508.

48. A scirrhous Cancer of a Humerus, secondary to a mammary Cancer.

From Specimen No. 510.

49. A scirrhous Cancer of a Humerus.

From Specimen No. 511.

50. A scirrhous Cancer of a Femur.

From Specimen No. 512.

51. A Tumour of a lower Jaw, consisting entirely of fibrous tissue, imbedded in which are cylinders and alveoli containing narrow, almost spindle-shaped, small epithelial cells. The tumour is of the same nature as the following specimen.

From Specimen No. 535.

52. An Epithelioma, involving a lower Jaw, the cells of which by undergoing colloid metamorphosis have led to the formation of cysts.

From Specimen No. 536.

DISEASES OF JOINTS.

53. Sections of a loose Cartilage. It consists of ordinary hyaline cartilage.

INJURIES OF BONES.

54. Callus from a fracture of a Tibia in an adult twenty days after the fracture occurred.

DISEASES OF MUSCLES, TENDONS, BURSÆ, &c.

55. Trichina Spiralis taken from the muscle preserved in Specimen 1176A.

56. A small, completely calcified Cyst, surrounded by a thick layer of condensed connective tissue, and lying in a portion of muscle taken from a leg of mutton, which contained very many of these cysts.

57. A section of a small pedunculated body, which was attached to the inner surface of a bursa patellæ. It is composed of dense fibrous tissue containing many nuclei, and its tissue is continuous with that of the wall of the bursa.

From Specimen No. 215.

DISEASES OF THE HEART AND PERICARDIUM.

TUMOURS OF THE PERICARDIUM.

SARCOMATA.

58. Section of a Lympho-Sarcoma involving the Pericardium.

From Specimen No. 1239.

59. Section of the same growth involving the Mediastinal Lymphatic Glands.

TUMOURS IN THE SUBSTANCE OF THE HEART.

SYPHILITIC.

60. A Gummatous (?) Tumour from the wall of the left Auricle. It is composed for the most part of a degenerated granular material, which obscures its structure, but in places a reticulum, filled with a similar material, can be made out.

From Specimen No. 1280A.

FIBROUS.

61. Section of a Growth composed for the most part of parallel bundles of connective tissue; it projected from the left side of the ventricular septum.

From Specimen No. 1284.

SARCOMATA.

62. A round-cell Sarcoma of the Heart.

From Specimen No. 1285A.

62a. Section of the Heart, containing small masses of round-cell Sarcoma.

From a case of disseminated sarcomata.

DISEASES OF ARTERIES.

EFFECTS OF LIGATURE.

63. A section of the extremity of a Femoral Artery from a Stump, three weeks after amputation. The clot is firmly adherent to the intima at one point; for the rest of its circumference, the periphery of the clot is thickly infiltrated with leucocytes. The middle, and deep layer of the inner coats of the artery are also in a corresponding situation thickly infiltrated with leucocytes.

The patient died of pyæmia.

ATHEROMA AND CALCAREOUS DEGENERATION.

64. Sections of an Atheromatous Aorta, showing fibroid thickening of the intima.

65. Primary Calcareous Degeneration of an Anterior Tibial Artery. The intima is thickened and the muscular coat is calcified throughout the greater part of the circumference of the vessel.

DISEASES OF VEINS.

PHLEBITIS.

66. Section of a Vein affected with Suppurative Phlebitis. The deep layer of the intima is crowded with leucocytes. A layer of organised blood-clot is attached to the inner surface of the vessel, but the central part of the clot was broken down.

From Specimen No. 1578.

DISEASES OF THE LARYNX.

TUMOURS.

67. Sections of an Epithelioma attached to the right Arytæno-Epiglottidean fold.

From Specimen No. 1652.

DISEASES OF THE LUNGS AND BRONCHI.

BRONCHITIS.

68. Mucous Cells from Bronchial Sputum containing pigment granules.

PNEUMONIA.

69. Croupous Pneumonia.

TUBERCLE.

70. Miliary Tubercle of the Lung. The alveoli in many places are filled with blood (pulmonary apoplexy).

70a. Miliary Tubercle of a Lung injected with Prussian blue. The vessels do not penetrate the tubercle.

71. A section of lung affected with Caseous Pneumonia.

DISEASES OF THE NOSE, MOUTH, AND TONGUE.

TUMOURS OF THE NOSE.

POLYPI.

72. Sections of a Nasal Polypus composed of mucous connective tissue, imbedded in which are tubules of gland tissue (myxo-adenoma).

73. A Nasal Polypus composed of homogeneous connective tissue, containing many nuclei, which is at several points undergoing calcification. Also a section of a tumour of the superior maxilla from the same case, having a somewhat similar structure, but containing relatively more nuclei and also spindle-cells. No. 72 was taken from the same case.

TUMOURS OF THE SUPERIOR MAXILLA.

74. An Epithelioma, which filled the Antrum. It originated probably in the gum.

TUMOURS OF THE TONGUE.

PAPILLOMATA.

75. A Small Papilloma from the side of a Tongue. The epithelium is irregular on the surface, much thickened, and from the deep surface many irregular ingrowths extend into the submucous tissue.

It was removed from a lady, aged 55 years, and was apparently caused by the irritation of the fastening of some artificial teeth.

76. A similar Specimen.

ICHTHYOSIS.

77. Section of a Tongue affected with Ichthyosis. The superficial and deep layers of the epithelium are increased in thickness, and the interpapillary processes of the latter are unusually elongated.

EPITHELIOMATA.

77a. Sections from the same Tongue, where the disease has given rise to epithelioma. The epithelioma recurred after the removal of the tongue.

From Specimen No. 1788.

78. Section of a Tongue, which had long been affected with chronic superficial Glossitis, taken from a situation near the margin of an epithelioma. The superficial layer of the epithelium is somewhat thickened and devoid of papillæ: and a gradually increasing elongation of the interpapillary processes of the deep layer is observable, finally, as the epithelioma is approached, amounting to distinct columnar ingrowths, some of which contain "cell-nests."

This and the preceding Specimens, Nos. 77, 77A, are described by Mr. Eve in a paper in the *British Medical Journal*, April 2nd, 1881.

79. Epithelioma of the dorsum of a Tongue. The section shows the extension downwards of the columns of epithelium from the surface, the centres of which are cornified.

DISEASES OF THE SALIVARY GLANDS.

TUMOURS.

SARCOMATA AND ADENO-SARCOMATA.

80. A section of a soft gelatinous Tumour of the Parotid Gland, composed of round and spindle-shaped nuclei, and scanty ill-developed connective tissue.

81. A firmer Parotid Tumour having a similar structure, but containing also gland tissue in the form of tubules lined with small round epithelial cells.

82. A nearly similar Specimen.

From Specimen No. 1832.

DISEASES OF THE PERITONEUM AND OMENTUM.

83. A section of a Cancer of the Omentum.

From Specimen No. 1886.

83a. A section of a gelatinous Tumour of the Omentum, weighing many pounds; it is composed of a soft gelatinous connective tissue, containing small cyst-like spaces enclosing round nuclei, and larger spaces filled with granular material.

DISEASES OF THE STOMACH.

84. A section of a Scirrhous Cancer (cylindrical-cell cancer) of the Stomach. Projecting from the inner surface of the stomach to a considerable extent was a soft mammillated growth, which is seen in the section to be composed of mucous tissue.

From Specimen No. 1924A.

DISEASES OF THE INTESTINES.

TUMOURS.

POLYPUS.

85. A section of a Polypus composed entirely of mucous tissue, which grew from the mucous membrane of the large intestine above a stricture.

From Specimen No. 2019a.

CANCER.

86. Sections of a Cylindrical-cell Cancer of the large Intestine. The Lieberkuhn's follicles in the neighbourhood of the cancer are much enlarged.

From Specimen No. 2020.

DISEASES OF THE RECTUM.

POLYPUS.

87. A section of a Polypus of the Rectum, composed of convoluted tubules of gland tissue lined with cylindrical epithelium, in which are many "goblet" cells. The tubules open on the surface, and are imbedded in a delicate stroma.

INTESTINAL CONFERVÆ.

88. Layers of Conferva discharged from the Intestine.

DISEASES OF THE LIVER.

DEGENERATIONS.

89. A section of a Liver affected with Amyloid Degeneration.

90. Section of a Liver, the cells of which have to a considerable extent undergone Fatty Degeneration; and the substance of the liver is infiltrated throughout with small round cells and nuclei.

From a case of disseminated round-cell sarcoma. There is a section of the heart from the same case, No. 62A.

DISEASES OF THE KIDNEY.

DEGENERATION.

91. Section of a Kidney, which had undergone complete Fatty Degeneration from disease, owing to the formation of a large calculus in the pelvis.

From Specimen No. 2353.

INFLAMMATION.

92. Section of a Kidney affected with acute Parenchymatous Nephritis (large white kidney). The epithelium of the tubules, especially in the cortical portion, is swollen, cloudy, and finely granular; and there is an abundant exudation of leucocytes between the tubules, and both around and within the glomeruli.

93. A similar Specimen from a case of Nephritis following scarlet fever.

TUMOURS.

CYSTIC DISEASE.

94. Sections of the Kidneys of an adult, affected in an advanced degree with cystic degeneration.

From Specimens Nos. 2382, 2383, in the description of which an account of the microscopic appearances is given.

CANCER.

95. Cancer of a Kidney. The section shows trabeculæ of connective tissue covered by, and enclosing, large epithelial-like cells, in many instances multinuclear.

From Specimen No. 2390.

DISEASES OF THE BRAIN AND DURA MATER.

DURA MATER.

SYPHILIS.

96. Section of a small Syphilitic Gumma occupying the substance of the Dura Mater.

From Specimen No. 2457A.

TUBERCLE.

97. Sections of a small mass of Tubercle situated upon the Dura Mater.

From Specimen No. 2458.

CANCER.

98. Section of a Tumour situated upon the Dura Mater, having the characters of a scirrhous Cancer. It consists of coarse fibrous tissue, enclosing alveoli filled with small cells.

From Specimen No. 2468.

THE BRAIN.

TUBERCLE.

99. Section of a Caseous Tumour of the Medulla Oblongata.

Its microscopic characters are given in the description of the Specimen No. 2492.

TUMOURS.

SARCOMATA.

100. Section of a Glioma occupying the Optic Commissure. It is composed of delicate connective tissue, in places having a reticular arrangement, and enclosing in its meshes numerous small nuclei.

From Specimen No. 2497.

101. A similar Specimen, but the reticular arrangement of the connective tissue is absent.

From Specimen No. 2498.

102. Section of a Tumour of the Brain, probably a round-cell Sarcoma.

From Specimen No. 2499.

103. Section of a Tumour of the Brain, probably a Sarcoma. It consists of connective tissue with many small nuclei, but other much larger nuclei are also scattered throughout it.

From Specimen No. 2500.

104. Section of a round-cell Sarcoma of the Brain. It is composed of closely packed round-cells with very little intercellular substance, and some fasciculi of spindle-cells.

From Specimen No. 2501.

CANCERS.

105. Section of a Cancer of the Cerebellum. The growth consists of large round nuclei, around many of which a cell substance is distinguishable. These are arranged, somewhat indistinctly, in alveoli bounded by a small amount of connective tissue. In places a villous or papillary arrangement is distinguishable. This and the appearance of the cells suggests that the tumour originated from the endothelium of the ependyma, or of the membranes of the brain.

From Specimen No. 2502.

106. A similar Tumour, but the cells are in this arranged in distinct alveoli, surrounded by a large amount of connective tissue, thickly dotted with small nuclei.

From Specimen No. 2502A.

107. Section of a Cancer connected with the Brain, containing a large amount of connective tissue.

From Specimen No. 2503.

DISEASES OF NERVES.

TUMOURS.

FIBROUS.

108. Section of a Tumour imbedded in the Median Nerve. It consists chiefly of fibrous tissue.

From Specimen No. 2556.

109. A similar Specimen; but although composed mainly of well-formed fibrous tissue, there are considerable tracts of embryonic connective tissue containing abundant round- and spindle-shaped nuclei.

From Specimen No. 2559.

109a. Sections of a Neuroma, consisting of soft, homogeneous, or finely filamentous, connective tissue containing abundant round or oval nuclei; in places the nuclei are very numerous, and separated by only a small quantity of connective tissue.

From Specimen No. 2559A.

DISEASES OF THE EYE.

TUMOURS.

SARCOMATA.

110. Section of a Tumour of the Iris, probably a round-cell Sarcoma.

From Specimen No. 2608.

111. Section of a Sarcoma of the Choroid. It is composed chiefly of small

spindle-cells, but also to a slighter extent of small round-cells, with no appreciable intercellular substance.

112. Horizontal Sections through the Porus Opticus, and a Glioma, which projected from it into the eye-ball. The growth is composed entirely of closely packed small round cells, with traces of delicate intercellular substance.

DISEASES OF THE SKIN.

113. Sections through pustules removed from the back, produced by the administration of iodide of potassium. The pustules occupy the deeper layer of the epithelium, and are covered by the cuticle. The epithelial cells around them are flattened, so as to assume a spindle shape; and the papillary layer beneath is flattened out, even, excavated, and contains many "indifferent" cells. There is nothing to indicate that the hair-follicles, or sweat-glands, are implicated.

See an account of the Specimens by Drs. Dyce Duckworth and V. D. Harris, *Pathological Society's Transactions*, vol. xxx, 1879.

TUMOURS.

FIBROUS.

114. Section through a small Molluscum Fibrosum. It is composed of fibro-nuclear tissue, viz.: homogeneous connective tissue containing abundant nuclei. The layer of epithelium covering the tumour is extremely thin.

EPITHELIOMA.

115. Sections through the margin of a Rodent Ulcer (epithelioma), implicating the cheek. The sections were taken from the upper lip. At the margin of the ulcer the epithelium is destroyed, and the surface is breaking down; the surrounding tissue is thickly infiltrated with indifferent cells: and rounded masses or branching columns composed of small epithelial cells—or nuclei of epithelial cells—are imbedded in it. The epithelium immediately beyond the margin of the ulcer is thickened.

116. Section of an Epithelioma which originated apparently within the cavity of a sebaceous cyst. The section shows a loose, ill-formed connective tissue in which columns and masses of squamous epithelial cells are imbedded. The tumour, which was the size of a fist, was removed from the neck of an old lady.

PARASITES.

117. Portion of Hairs from a case of "Porrigo Decalvans."

118. Itch Parasites from a Horse (Sarcoptes Equi).

DISEASES OF THE TESTICLE.

SYPHILIS.

119. Section of the margin of a Syphilitic Gumma in the Testicle. The gumma itself is composed of indistinct degenerating non-vascular fibroid tissue; but at its periphery the section shows a loose fibrous tissue enclosing abundant nuclei in its meshes; the numerous vessels of this tissue are injected.

From Specimen No. 2771.

TUMOURS.

SARCOMATA.

120. Section of a Nodule of hyaline Cartilage imbedded in a Sarcomatous

Tumour of the Testicle. The cartilage is arranged in small rounded nodules separated by trabeculæ of tissue composed of spindle-cells. The cartilage cells are abundant, small, and lie in the meshes of a hyaline matrix.

From Specimen No. 2797.

121. Sections of a Sarcoma of the Testicle from a boy. The tumour is composed of small round cells lying in a loose reticulum of fibrous tissue.

A tumour from the back of the same boy is preserved in No. 3293, p. 494, where the case is described.

CANCER.

122. Section of a Cancer of the Testicle. Alveoli, enclosing closely packed oval or round cells of very uniform size, are formed by broad trabeculæ of embryonic connective tissue containing a large number of round and spindle-shaped nuclei, and in some places spindle-cells.

From Specimen No. 2798.

DISEASES OF THE PENIS.

SYPHILIS.

123. A section through the Prepuce, and a Syphilitic Sore, which had existed eight weeks. The whole section, especially at the base of the ulcer, is closely crowded with round "indifferent" cells lying loose in the connective tissue or enclosed in the meshes of a connective tissue reticulum. The walls of the vessels are thickened. The patient had psoriasis and sore throat at the time of the removal of the sore.

124. A section of a Prepuce and of a Syphilitic Sore, believed to be non-infective. It presents the same appearances as the preceding, except that the indifferent cells are less closely crowded, and an ingrowth of epithelium is apparent at the margins of the ulcer.

DISEASES OF THE OVARIES.

125. Portion of an Ovarian Cyst, in which the capillary and other small blood vessels are irregularly dilated or varicose.

Prepared by Professor Harting.

Presented by Dr. von Leeuwen.

126. Sections of an Ovary, which has undergone Cirrhosis.

127. Sections of a Cancerous Papillary Growth, which was attached with many others to the inner surface of a large Ovarian Cyst by a pedicle of fibrous tissue: from this thin trabeculæ of connective tissue branch out, again giving off finer secondary branches, which by anastomosing form irregular alveoli, mostly of an oval form. The margins of the alveoli are lined with, and also enclose, large granular epithelial-like cells. Their centre is occupied in many instances by colloid material. Among the innermost layer of cells, many may be observed undergoing colloid metamorphosis.

From Specimen No. 2912.

128. Sections of a Tooth from an Ovarian Cyst in a Mare. It has all the structures of a perfect tooth.

Presented by Professor Symonds.

DISEASES OF THE UTERUS AND ITS APPENDAGES.

129. A Tumour connected with the Broad Ligament. It consists entirely of dense fibrous tissue.

From Specimen No. 2942.

MYO-FIBROMA OF THE UTERUS.

130. Section of a Uterine Myo-fibroma. It consists for the most part of dense fibrous tissue, intermixed with fasciculi of organic muscular fibres.

DISEASES OF THE VAGINA AND EXTERNAL ORGANS OF GENERATION.

131. Section of an Hypertrophy of the Clitoris. It is composed of ordinary dense connective tissue covered by a thin layer of epithelium.

132. Section of a Fibro-cellular Tumour of the Labium. It is composed of interlacing bundles of fibrous tissue, with interspaces between the bundles, which were filled with serous fluid. Two or three cyst-like spaces may also be observed in the section, having no lining membrane.

From Specimen No. 3024.

133. Section of a Myo-Fibroma removed from the wall of the Vagina. It is composed of fibrous tissue intermixed with a large proportion of organic muscular fibres.

From Specimen No. 3029.

DISEASES OF THE MAMMARY GLAND.

GROWTHS FROM THE INTERIOR OF CYSTS.

134. A Section of a Proliferous Growth from the interior of a Cyst in the Mammary Gland. It is composed of an imitation of gland tissue, in the form of tubules and cylinders, irregularly arranged and lined with columnar epithelium.

From Specimen No. 3147.

135. A Proliferous Growth closely resembling the preceding, but the arrangement of the cells around the margins of the alveoli is less regular.

From Specimen No. 3148.

136. Sections of a Proliferous Growth from the interior of a Cyst in the Mammary Gland. It consists of irregularly-shaped alveoli, surrounded by narrow bands of fibrous tissue and enclosing cells, having the characters of epithelial cells.

From Specimen No. 3149.

137. A Proliferous Growth closely resembling in microscopic characters No. 135.

From Specimen No. 3151.

138. Sections of a Proliferous Growth, which consists entirely of well-formed fibrous tissue.

From Specimen No. 3153.

FIBRO-ADENOMATA.

139. A Fibro-adenoma of the Breast. It consists of dense well-formed fibrous

tissue, enclosing tubules of gland-tissue lined with small round epithelial cells.

140. A similar Specimen.

141. A similar Specimen.

From Specimen No. 3157.

142. Section of Fibro-adenoma, the greater part of which is composed of loose, fibrous tissue, containing many nuclei, and, in places, of mucous tissue: enclosed within the matrix are tubules of gland-tissue and large, irregular, and radiating spaces lined with small epithelial cells.

From Specimen No. 3158.

MYXOMATA, SARCOMATA, ADENO-SARCOMATA.

143. A Tumour of the Breast, consisting for the most part of mucous tissue, containing a few roundish and irregular cyst-spaces: tracts of fibrous tissue intersect the tumour.

From Specimen No. 3162.

144. A Tumour of the Mammary Gland, consisting of loose connective and some mucous tissue containing many nuclei, and enclosing irregular cyst-spaces lined by epithelium, into which nodules of the tissue forming the bulk of the tumour, project. Some tubules of gland-tissue are also observable.

From Specimen No. 3288A.

145. A Tumour, in general arrangement resembling the preceding; but the matrix is so thickly crowded with nuclei, that it presents the characters of a round-cell sarcoma.

From Specimen No. 3161B.

146. A Tumour of the Mammary Gland, which consists of fibrous tissue enclosing some gland-tissue; but in places it is largely composed of spindle-cells.

From Specimen No. 3163.

CANCERS.

147. Section of a scirrhous Cancer of the Mammary Gland. The tumour consists of a dense connective tissue stroma, enclosing alveoli, of various shapes and sizes, filled with cells of the epithelial type, so closely aggregated, that the protoplasm around the deeply-stained nucleus of the cells appears blended.

148. A similar Specimen.

149. A scirrhous Cancer of the Mammary Gland, in which the stroma is abundant and the alveoli small. The cells have dropped out from many of the alveoli.

From Specimen No. 3166.

150. A similar Specimen, in which the alveoli are larger.

From Specimen No. 3167.

151. A scirrhous Cancer of the Mammary Gland.

From Specimen No. 3180.

152. A medullary Cancer of the Mammary Gland.

From Specimen No. 3184.

153. A medullary Cancer of the Mammary Gland, in which the cells had in places undergone colloid degeneration.

FIBROUS TUMOUR OF NIPPLE.

154. A Pedunculated Tumour growing from the nipple, which formed its pedicle. It is composed entirely of well-formed fibrous tissue, and is covered by epithelium.

From Specimen No. 3187.

GENERAL PATHOLOGY.

INFLAMMATION AND ITS EFFECTS.

155. Portion of False Membrane, formed around blood effused in the arachnoid sac. Its blood-vessels are minutely injected; they form an irregular wide-meshed plexus.

Prepared and presented by Henry Gray, Esq.

156. A small partially healed Scar on the Face, caused by the bite of a mad dog, and leading to the death of the patient from hydrophobia. The wound shows the ordinary appearances of healing by granulations. The epithelium terminates abruptly on either side of the wound, the surface of which is covered by a thick layer of closely-crowded "indifferent" cells. These also infiltrate the subjacent subcutaneous tissue to a considerable depth.

157. A section taken at the margin of an Ulcer of the Leg. It shows essentially the same appearances as the preceding; at the margin of the ulcer the epithelium is thickened and its interpapillary processes are elongated.

ENCHONDROMATA.

158. Sections of an Enchondroma, which grew from the posterior surface of a Femur into the popliteal space. The cartilage cells are of very varying shapes, and some are branched: the matrix is in places softened and breaking down from mucoid degeneration.

159. An Enchondroma, the matrix of which is in some parts hyaline, in others fibrous.

From Specimen No. 3261.

FIBROUS TUMOURS.

160. Section of a "painful Subcutaneous Tumour," composed of dense fibrous tissue, arranged for the most part in small interlacing fasciculi.

From Specimen No. 3270.

161. Section of a Subcutaneous Tumour composed of loose reticular connective tissue, containing many round, oval, and elongated nuclei in its meshes.

From Specimen No. 3276.

162. Section of a Fibrous Tumour removed from the Ulnar Nerve. It is composed of filamentous connective tissue containing abundant small round and spindle-shaped nuclei.

From Specimen No. 3283.

STRIPED MUSCLE TUMOURS.

162a. A section of a Tumour connected with a Kidney of an infant, composed principally of fascicuti of striped muscular fibres. Scattered throughout the growth small nodules of closely crowded round cells are found, intermixed in places with spindle-cells. All transitions from the round cells into spindle-cells, and from the spindle-cells into striped muscular fibres were observable. No kidney structures were found in the growth.

From Specimen No. 3293A.

162b. Sections from similar Tumours connected with both Kidneys of the same Infant. The specimens are preserved in the Museum of the Royal College of Surgeons of England.

For a fuller account of these cases, see a paper by Mr. Eve in the *Transactions of the Pathological Society*, 1881–2.

SARCOMATA.

163. Section of a Tumour from the Axilla, composed of small round cells, resembling lymph-corpuscles, enclosed in a stroma consisting of scattered interlacing bundles of fibrous tissue.

From Specimen No. 3296.

164. Section of a Tumour of the Palate, of many years' duration. It consists of round cells, lying on the surface of, or in the spaces between, bands of fibrous tissue, having somewhat the arrangement and appearance of trabeculæ of cancellous bone.

165. Section of a rapidly growing Sarcoma of the Lip of a young child. It consists of round elongated and spindle-shaped cells, closely aggregated, or in places separated by a considerable amount of fine filamentous or mucous connective tissue.

166. A soft Sarcoma (? lympho-sarcoma) removed from the popliteal space. Under the microscope it shows small, closely-crowded, round cells, lying within alveoli formed by trabeculæ of homogeneous connective tissue. The cells have the size and appearance of white blood or lymph corpuscles.

167. Section of a recurrent growth from the same case preserved in Specimen No. 3298, and having the same histological characters.

168. Section of a subcutaneous Tumour, composed for the most part of small spindle-cells, intermixed abundantly in places with round-cells. Round-cells are abundant around the vessels, which have no proper walls. In places a transition from round-cells into spindle-cells is observable, and again a transformation of spindle-cells into connective tissue.

From Specimen No. 3303.

ADENOMA.

169. Section of an Adenoma of the Skin. In histological structure it consists of convoluted and branching columns of very small cells. Some of the larger columns contain a central space, filled with granular material, and having the appearance of the lumen of a tubular gland. The granular matter consists of fat, and contains crystals of cholesterine. The tumour may be regarded as an adenoma connected with the sebaceous glands.

See an account of the case by Mr. Eve, *Transactions of the Pathological Society*, 1881–2.
From Specimen No. 3320.

PAPILLOMATA.

170. Section of a pigmented Papilloma removed from the Skin of the side. Under the microscope papillæ are seen projecting from the surface, covered by a thick layer of cuticle; there is a slight ingrowth of epithelium from the deep stratum of the rete Malpighii into the tissue at the base of the growth, which consists almost entirely of small round cells.

From Specimen No. 3322.

171. A Papillary Growth from the Skin, consisting of rounded, foliaceous processes, composed of small round cells, lying in a scanty, homogeneous, connective tissue, and continuous with a small-cell infiltration of the corium. The papillæ

are covered by a thin layer of epithelium, the lower strata of which are columnar.

From Specimen No. 3323.

EPITHELIOMATA.

172. A Warty Growth, removed from the back of the hand of an old lady. The cuticle is only slightly thickened, but there is a very decided growth of the inter-papillary processes of the rete Malpighii in the form of columns, the centres of which contain rounded masses of cornified epithelium (cell-nests), in some cases seen to be continuous with the cornified epithelium on the surface of the wart.

173. Section of a Warty Growth from the Perineum. The microscope shows in addition to an increased thickness of the cuticle, an ingrowth from the deep stratum of the rete Malpighii in the form of down-dipping papillary processes, containing in places "cell-nests." It appears to be a wart in a state of transition to epithelioma; a condition seen also in the preceding specimen.

The case is described by Mr. Eve, in a paper "On the Relation between Irritation and Epithelioma."—*British Medical Journal*, April 2nd, 1881.
From Specimen No. 3324.

174. Section through part of an Epithelioma of the Heel. At the margin of the growth papillary prolongations of the rete Malpighii extend downwards into the corium; and towards its centre this ingrowth is much more considerable; the cuticle (stained with picro-carmine) is here much thickened, and is continued downwards into the growth as large, irregularly branched columns of cornified epithelium, surrounded by a layer of small epithelial cells, resembling those of the rete Malpighii.

175. Section of another portion of the same growth taken from the extreme margin. The epithelioma grew from a corn, which had existed some years.

The case is described in the same paper with the preceding, No. 174.
From Specimen No. 3325.

176. A section of an Epithelioma of the Tongue taken parallel to the surface. The ingrowing columns of epithelium are cut across, and have the appearance of tubes owing to the falling out of the cornified epithelium in their centres.

From the same specimen as No. 78.

ANGIOMA.

177. Section through various parts of the Pinna of an Ear affected with arterial angioma, the vessels of which are injected. A dense network of minute anastomosing capillaries extends throughout most of the sections, and large sinus-like vessels and smaller arterioles are also cut across. The walls of the latter are composed of layers of condensed connective tissue; and the capillary walls of a single layer of endothelium. The vessels are imbedded in a matrix of filamentous connective tissue, containing many round and some spindle-shaped nuclei.

178. Section of the skin of the Pinna from the same specimen. The network of capillaries extends into the corium; and the interpapillary processes of the rete Malpighii are elongated, and in some places a very distinct branched ingrowth of epithelium is observed.

From Specimen No. 3345.

URINARY AND OTHER INORGANIC DEPOSITS.

179. Sheaf-shaped crystals of Oxalate of Soda.

180. Crystals of Carbonate of Lime from human urine.
Presented by Arthur Stretton, Esq.

181. Crystals of Murexide.

182. Prismatic Crystals of triple Phosphate from the bladder of a Pig.
From Specimen No. 2436.

183. Crystals of Hippuric Acid from the urine of a Cow.

184. Crystals of Carbonate of Lime from the urine of a Horse.

185. Uric Acid from Gouty Concretions.

186. Urate of Soda from a Gouty Deposit.

SERIES LVI.

CASTS AND MODELS OF DISEASED OR INJURED PARTS.

DISEASES OF BONES.

1. Cast of a Head, in which the bones are extremely thickened, with changes of structure similar to that shown in Series I, No. 72.

2. Cast of a Leg, showing great thickening of the Tibia, and a well-marked curvature of the bone with the convexity forwards. The other leg was similarly affected.

From a girl, aged 16 years, whose legs did not become affected until she was 9 years old. At the time the cast was taken there was no pain or tenderness of the tibia, and the deformity was not increasing. There was no evidence of congenital syphilis; none of the other bones were affected, nor were the ribs beaded.

2a. Cast of a Leg, the Tibia of which is thickened and curved with the convexity in the anterior direction.

There was no evidence of congenital syphilis.

3. Cast of a Foot and Ankle, showing a peculiar deformity, due to the abnormal prominence of the malleoli. On a level with the epiphysial line at the lower extremity of the fibula, is a smooth nodular outgrowth of bone. The whole of the internal malleolus is greatly and uniformily enlarged, and there is also a slight separate outgrowth at the level of the epiphysial line.

From a boy, aged 9 years.

4. Cast of a boy's Head with a large tumour, described in Series I, No. 455.

4a. Cast of a Head, with a large cartilaginous and osseous tumour, involving and extending far over the right superior maxillary bone.

Portions of the disease are in the Museum of Guy's Hospital; and the case is related by Mr. Morgan in the *Guy's Hospital Reports.*

5. Enchondroma of the Hand.

From the Specimen, Series I, No. 412.

6. Cast of the Thigh and parts of the Pelvis from which the portions of cartilaginous and osseous tumour were taken, which are preserved in Series I, Nos. 428 and 429.

6a. A Cast of the right Groin, showing a rounded prominence immediately below Poupart's ligament, produced by the tumour preserved in Series I, Nos. 370A, 370B.

7. Cast of a Lower Extremity. The femur was surrounded by the large tumour, of which part is preserved in Series I, No. 423.

8. Model of a Tumour originating in the antrum.

9. Cast of the Head of a child, with a tumour of the face, produced by a morbid growth, originating in the superior maxillary bone. The growth had existed from birth.

10. Cast of a Face, deformed by a disease originating in the antrum.

11. Model of a Leg, with epithelial cancer, which, originating probably in the skin, had involved the periosteum over the front of the tibia.

The diseased parts are preserved in Series I, Nos. 493, 494.

12. Model of a Leg, showing the further progress of a similar disease. The cancerous growth has its base in the cancellous tissue and posterior wall of the tibia, the superjacent parts having been destroyed by it.

The diseased parts are in Series I, Nos. 491, 493.

13. Cast of a Lower Extremity. The femur was surrounded by the large tumour, of which parts are preserved in Series I, Nos. 515, 516.

DISEASES OF JOINTS.

14. Cast of a Knee-Joint, swollen by the accumulation of fluid within its cavity. The surface of the swelling is unequal, because of the unequal resistance of the parts around the joint; and it appears divided by depressions extending outwards from the sides of the patella, and downwards from its lower margin to the tibia. The outline of the patella, raised by the fluid in the joint, can be traced.

15. Cast of a Knee-Joint, greatly enlarged by chronic disease, probably affecting chiefly the synovial membrane and the ligaments. The patient had the power of dislocating his leg in any direction at will.

16. Cast of a Knee-Joint affected with destructive disease. On either side of the joint is a bulging prominence produced by a circumscribed dilatation of the synovial membrane.

16a. Cast of part of the Lower Extremity of a man. At the upper part of the calf is a large rounded swelling, found after amputation to be due to a cyst lying between the integuments and the gastrocnemius muscle, and communicating with the knee-joint. The synovial membrane of the knee-joint was distended, and the joint was the seat of destructive inflammation.

17. Cast of the Bones of a Hip-Joint, from a gentleman who, several years before death, received a severe injury of the hip in a fall, and remained lame; much doubt existed, during life, respecting the nature of the injury sustained. The condition of the bones shown by the casts is such as would result from long-continued inflammation, producing deposit of bone upon the head of the femur and the borders of the acetabulum.

18. Cast of the Bones of a Hip, with dislocation of the femur in consequence of disease of the joint. The head of the femur rests on the surface of the ilium, directly above the acetabulum.

19. Cast of the Knee-Joint of an adult. During disease in childhood the bones

of the leg were dislocated, moving directly backwards from their connexion with the femur. The tissues about the joint were atrophied and contracted.

20. A Knee contracted from disease.

20a. Cast of a Knee affected with rheumatoid-arthritis. The synovial membrane is distended, and on either side of the joint is a rounded prominence, running from before backwards, and due to the growth of osteophytes from the margins of the articular surfaces of the femur and tibia.

21, 22. Casts of a man's Hands, deformed with masses of gouty deposit (chalk-stones) about nearly all the articulations of the fingers. All the fingers also are directed towards the ulnar margin of the hand.

Presented by Owen Evans, Esq.

23. A specimen of the same disease in a slighter degree.

Presented by Dr. Dyce Duckworth.

23a. Casts of two Hands with many nodes over the phalangeal and metacarpo-phalangeal joints, produced by deposits of urate of soda.

INJURIES OF BONES (Fractures).

24. Cast of the upper half of a Humerus, in which a transverse fracture through the surgical neck separated the head with the tubercles from the shaft. Union took place, with the lower border of the head impacted in the cancellous tissue of the upper part of the shaft, and with such misplacement that, if the articular surface of the head had its natural relation to the glenoid cavity, the shaft must have been abducted to an angle of thirty to forty degrees from the side of the body.

From a specimen in the Museum of St. Mary's Hospital.

25. Cast of a Fore-arm and Hand, with deformity of the Wrist, connected with fracture of the radius an inch from the joint, and separation of the triangular fibro-cartilage from its radial attachment.

The parts are in Series III, Nos. 926.

26. Cast of a Hand and part of the Fore-arm, taken immediately after the occurrence of a fracture through the lower extremity of a radius (Colles' fracture).

27. Cast of a Knee fourteen years after fracture of the patella. The portions of the patella are four inches apart, and, in the bent position of the joint, the condyles of the femur project between them. The strength and movements of the joint were not seriously impaired.

28. Fracture of the Patella, with great separation of the two portions, taken many years after the accident.

29. Fracture of the Tibia and Fibula immediately above the ankle-joint.

Presented by G. Smith, Esq.

30. Cast of a Leg, with great deformity at, and above, the ankle-joint, in consequence of a comminuted fracture of the lower ends of the tibia and fibula, and the accumulation of bone in the repair of the injury.

31. Cast of a Foot, which had been dislocated outwards, with, probably, fracture of the internal malleolus and fibula. After the usual treatment, the form and strength of the limb appeared to be restored. But the patient returned too early

to his work as a lamp-lighter, and very gradually his foot was again displaced; yet without great damage to his power of progression.

32. A partial Dislocation of the Foot outwards from the tibia, with fracture of the lower extremity of the fibula.

33. A Cast, showing a somewhat similar condition.

34. Displacement of the Foot outwards and somewhat backwards, with fracture of the Fibula.

35. Cast of a Leg, with dislocation of the Foot straight backwards from the ankle-joint, and fracture of the fibula a short distance above its malleolus.

INJURIES OF JOINTS (Dislocations, &c.).

36. A Cast showing a recent Dislocation of the acromial end of the clavicle, upwards and backwards.

Presented by L. Holden, Esq.

37. Cast of a Shoulder, with an old dislocation of the humerus, the head of the bone lying immediately below the coracoid process of the scapula.

The parts are preserved in Series IV, No. 1020.

38. Cast of a Shoulder, with the head of the humerus dislocated into the axilla.

39. Cast of a Shoulder, with the head of the humerus dislocated upon the dorsum of the scapula. The head of the humerus rested against the inferior surface and outer edge of the spine of the scapula, its anterior edge being worn in adaptation to the posterior margin of the lower half of the glenoid cavity.

Dislocation occurred long before death. The humerus was also fractured in the middle of its shaft. The bones are preserved in Series IV, No. 1027.

40. Cast of a Shoulder, with the head of the humerus recently dislocated upon the infra-spinous fossa of the scapula.

41. Cast of an Elbow, with the radius and ulna dislocated on the posterior surface of the lower end of the humerus.

42. Cast of an adult Elbow, with a prominence at the outer part of the joint, due to a dislocation of the head of the radius, which occurred in early life. The head of the radius appears to have been in relation with the outer surface of the external condyle of the humerus; but the motions of the joint were perfect.

43. Cast of the Fore-arm and Hand of a woman in whom the hand was dislocated from the radius and ulna in early childhood. The ulna projected far backwards, and the little finger diverging from the rest, was directed backwards and inwards. Its was not known whether the dislocations were produced by violence or in consequence of disease.

44. Cast of a Dislocation of the Carpus backwards, from the radius and ulna.

From a man, who fell a height of forty feet, sustaining at the same time several other injuries, from which he recovered.

45. Cast of a left Hand and Fore-arm. The hand and carpus together are considerably displaced forwards and to the radial side, so that the outline of the articular surface of the ulna, and almost the whole of that of the radius, can be traced. Flexion was scarcely at all impaired; extension much more so. The

patient could grasp with considerable force, and was still gaining strength in the joint.

From a sailor, aged 35 years, who had always had excellent health. Two years before applying at the Hospital his wrist became swollen and painful; but he continued at his work till six months later, when he fell, doubling the wrist beneath him. The accident was followed by great pain in the part with much swelling and redness of the integuments. Suppuration soon ensued, and was succeeded by gradual displacement of the carpus and hand forwards and outwards. The sinuses which formed discharged freely for some months, and then closed. When last seen, he was again working as a sailor. There were several sinus-scars about the joint.

46. Cast of the Bones of a Hip-Joint. The head of the femur, long before death, was dislocated into the obturator foramen, and now projects, with a considerable prominence, into the cavity of the pelvis.

46a. Spontaneous Dislocation of both Femora from disease.

The cast was taken from a child, aged 4 years; the thighs were usually flexed on the abdomen, and the legs on the thighs, but there was free movement at the hip-joints short of extreme flexion and extension. The pelvis was widened and the nates flattened. On making an examination under chloroform, the femora were found to be dislocated upwards and backwards. On making extension the heads of the femora returned to their sockets, but regained their former abnormal position on relaxing the extension. The child began to walk at the usual time, and nothing abnormal was observed about the hip-joints. Four months before his admission to the Hospital symptoms of inflammation appeared in the left hip, a few days after he had been placed astride a horse for a few minutes, and 2½ months later the right hip became similarly affected.

The case is related by Mr. W. Morrant Baker in the *St. Bartholomew's Hospital Reports*, vol. x, p. 287.

47. Cast of a case of Congenital Dislocation of both Femora, taken from a man, aged 24 years. The cast was taken with the patient in the recumbent posture.

48. Cast of a right Knee, with the patella dislocated outwards, its inner margin being directed straight forwards.

The cast was made very shortly after the injury.

Presented by T. Blizard Curling, Esq.

49. Cast of a right Knee, with the patella dislocated on the outer surface of the external condyle of the femur. The dislocation had long existed. The parts are in Series IV, No. 1051.

50. Cast of a Knee, in which it was presumed that displacement of the internal semilunar cartilage had been produced by external violence. Over the situation of the cartilage there is a deep crescentic depression of the integuments.

The patient was knocked down, and fell with his left leg bent under him; and from that instant was unable to bear weight on the limb. In examining the limb, whilst the knee was bent to its utmost, a sudden crack was heard, the depression of the integuments on the inner side of the joint disappeared, and the mobility of the joint was restored.

51. Cast of the inner surface of the left Knee-Joint of a man, aged 48 years. The Tibia and Fibula were dislocated outwards with the Patella, which was partially rotated inwards. The prominence on the inside is the internal condyle of the Femur. The prominence in front is the Patella, with the outer edge turned forward.

52. Cast of a right Knee, with dislocation of the tibia and fibula inwards.

Presented by Martin Coates, Esq.

53. Cast of a right Knee. The tibia is not only dislocated backwards and outwards, but is drawn upwards to such an extent that the outer condyle of the

femur rests on the inner surface of the shaft of the tibia, just below the inner tuberosity.

From a man, aged 63 years, who had been subject to rheumatic attacks, the last of which occurred eleven months before his admission into the Hospital. The patient stated that the knee remained swollen for six weeks after this attack, and that while the swelling was subsiding, he suddenly felt, early one morning, the joint give way, and the bones at once fell into much the same position shown in the cast. He recovered after amputation through the knee-joint.

54. A Cast of a left Foot and Leg, exhibiting a dislocation of the foot backwards.

From a man, aged 58, who, four years before admission into the Hospital, dislocated his foot backwards, by slipping forward as he came down stairs. He was laid up for about a month after the accident, but, at the end of this time, began to get about although the dislocation was not reduced. At the time of his admission the patient could walk pretty well, and without pain or special difficulty. There was a fair amount of motion, both in flexion and extension of the foot.

See *Rahere Ward Book*, vol. ii, p. 374.

55. Cast of an Ankle-Joint, with a similar dislocation.

56. Cast of a Foot, showing a sub-astragaloid dislocation of the foot inwards; the head of the astragalus forms a prominence on the outer side of the foot.

57. Cast of a deformity of the Foot, produced by an injury. Probably a sub-astragaloid dislocation of the foot outwards.

58. Cast of an injury to a Foot of uncertain nature. There are two prominences on the outer side, the upper of which is probably the head of the astragalus, the lower, the anterior, and outer edge of the os calcis. The anterior bones of the tarsus appear to be somewhat displaced inwards. The lower part of the fibula was fractured.

Presented by G. Smith, Esq.

DISEASES AND DEFORMITIES OF THE SPINE.

59. Cast of the Back of a child, with angular curvature of the lumbar portion of the spine, in consequence of disease.

60. Cast representing an Iliac Abscess projecting at the upper and outer part of the thigh.

61. Cast representing a Psoas Abscess projecting at the upper and inner part of the thigh.

62. Cast of the upper part of a Thigh, with a Swelling produced by Psoas Abscess, and mistaken for a femoral hernia.

From the person part of whose spine is in Series V, No. 1071.

63. Cast of a Back, with irregular prominence of the spinous processes of three lumbar vertebræ, in consequence of fracture of the spine.

64. Cast of a Back, after a similar injury, producing prominence of the spinous processes of the two upper lumbar vertebræ.

65. Cast of a Back, after a similar injury, and displacement of one or more dorsal vertebræ. The patient recovered from the injury.

DISEASES AND INJURIES OF MUSCLES, TENDONS, AND BURSÆ.

66. Cast of a Hand with a contracted Finger, following inflammation and suppuration of the theca.

67. Cast of the lower part of the Leg and Foot of a man, from whom the tendo Achillis had been shot away.

68. Cast of a Fore-arm and Hand, with a Swelling produced by accumulation of fluid in the synovial sheaths of the flexor tendons of the fingers. The irregularity of the swelling was due to the resistance of the annular ligament and the palmar fascia, under which the distended sheaths were placed.

69. Cast of a woman's Shoulder, with a large Swelling which appeared to be due to accumulation of fluid in the bursa under the deltoid muscle. The swelling is prominent over all the articulation, but especially in front of, and behind, the deltoid.

70. Cast of a Knee, with a great enlargement of the bursa over the patella.

71. Cast of a Knee, with a similar but less uniform enlargement of the bursa, producing a bi-lobed swelling over all the front of the joint.

72. A Hand, with club-shaped fingers, from a case of phthisis.

73. Cast of the right Lower Extremity of a boy. The knee is contracted, and the tibia displaced backwards and rotated outwards; the leg was immovably fixed in this position. The foot was unnaturally movable at the ankle, and in a position of talipes valgus. The other limb was similarly affected.

When about nine months old he received an injury to his back, and the lower extremities became paralysed. When admitted to the Hospital sensation was not impaired, and he had some slight power of moving the thighs.

74. Casts of the Lower Extremities: the left leg is affected with genu valgum; the right with complemental varum.

From a boy, aged 16 years, who was under treatment in the Hospital.

75. A Cast taken from the same patient after six months' treatment by splints.

For a further account of the case see *Lancet*, November 16th, 1872, p. 702.

Presented by Luther Holden, Esq.

75a. Congenital Talipes Varus.

76. Congenital Talipes Varus in an advanced stage.

77. Casts of two Feet presenting an extreme degree of Talipes Varus. The prominence on the outer side of each foot is produced by the projection of the cuboid bone covered by cornified skin, on which the patient rested his weight in walking.

78. Cast of the Leg and Foot of a child affected with Talipes Equino-Varus.

79, 80. Casts of the Leg and Foot of an adult. No. 79 shows an extreme degree of the deformity named Talipes Equino-Varus. The heel is raised; the sole of the foot is turned directly inwards; its arch is very short and deep, and parts of its outer margin are covered with a large bursa, where it rested on the ground. No. 80 shows the restored shape of the foot after treatment, which included subcutaneous division of the tendo Achillis, and of the tendons

of the tibialis posticus, and flexor longus digitorum muscles; also the plantar fascia.

81, 82. Similar Casts of a case of Talipes Equino-Varus, before and after treatment, including subcutaneous division of the tendo Achillis, the tendon of the tibialis posticus muscle, and of the plantar fascia.

The patient was a girl, 12 years old. After the restoration of the shape of the foot the whole limb became larger.

83. Cast of a left Leg and Foot affected with an extreme degree of Talipes Equino-Varus, from a boy aged 11 years. Owing to the extreme rigidity of the foot all attempts to remedy the deformity by instruments were useless.

84. A Cast of the right Leg and Foot of the same patient similarly deformed, but in a slighter degree.

85. A Cast of the left Foot of the same patient, from whom the two preceding casts were taken, after the performance of the following operation. A wedge-shaped mass, with the base outwards, was removed from the tarsus, including the anterior portion of the cuboid, the bases of the outer three or four meta-tarsal bones and the external and middle cuneiform bones. The internal cuneiform was sawn through. The calcaneo-cuboid and astragalo-scaphoid articulations were thus left undisturbed. The wound healed in three months. Before the operation the heel was raised one inch and a half above a plane on which the toes rested; after it, the foot could be placed flat on the ground.

See *Pitcairn Ward Book*, vol. v, p. 161.

This and the two preceding Specimens were presented by A. Willett, Esq.

86. Cast of a similar case of Talipes Varus.

87. Cast of the Pelvis and Lower Extremities of a girl, aged 8 years, the subject of severe Talipes Equinus of both feet, with contraction of the knees and general distortion of the lower limbs from spasmodic contraction of the muscles.

88, 89. Casts of the Leg and Foot of a child 4 years old. No. 88 shows the deformity named Talipes Equinus, which had, in this case, existed for two years. No. 89 shows the restored shape of the parts a month after subcutaneous division of the tendo Achillis, and other appropriate treatment.

Presented by Joseph W. Square, Esq.

90. Casts of the Feet of a young man, both showing an extreme degree of flat-foot.

91. A similar Specimen.

Presented by A. Willett, Esq.

92. Cast of the Foot of a child affected with congenital flat-foot.

93. Cast of a Foot, deformed with eversion and flatness of the sole: a slight degree of Talipes Valgus.

94. Cast of a Foot affected with Talipes Cavus, the sole being greatly and unnaturally arched.

95. Two Feet similarly deformed, but in a slighter degree. The toes, especially the great toe, are drawn upwards by the tension of the extensor tendons.

96. Casts of the Feet of a boy, both presenting precisely similar appearances. They are in a position of Talipes Equinus, and in addition the great toes are

flexed and turned outwards to such a degree that they lie upon the sole. The other toes are also somewhat flexed.

The boy was the subject of spina bifida, and both lower extremities were almost completely paralysed.

97. Cast of a Foot, the toes of which, especially the great toe, are unnaturally upturned.

From a woman, aged 24 years, who had had paralysis of the muscles of the calf for three years.

See case of S. E. Schofield, *Mary Ward Book*, January, 1880.

DISEASES OF ARTERIES.

98. Cast of a Heart, with an Aorta, the arch of which is greatly dilated. An aneurism, arising from the anterior part of the dilatation, has protruded through the ribs and strenum.

Presented by D. Fox, Esq.

99. Cast of a Neck, with a swelling produced by an aneurism of the lower part of the left common carotid artery.

100. Model of a Leg, in which extensive sloughing took place after ligature of the femoral artery. The ligature was applied in a case of aneurism, following a wound by which it is probable that the femoral vein, as well as the artery, was injured.

DISEASES OF VEINS.

101. Cast of part of a man's Trunk. In consequence, apparently, of obstruction of the right jugular and subclavian veins, the superficial veins upon the right side of the front of the chest and abdomen were very large and tortuous. Through them the blood was carried from the right upper extremity and the right side of the head and face, towards the inferior vena cava.

DISEASES OF THE NOSE, MOUTH, AND TONGUE.

102. Cast of part of the Face of a woman, in whom a new nose was made with a portion of skin from the forehead.

The operation was performed by Mr. Vincent.

102a. Model of the Face of a man, with a large fungating, probably malignant, growth protruding from the nostrils.

102b. The same after operation.

103. Cast of a Tongue, showing two large gummata, one at the tip, the other on the dorsum. The epithelium around and between them is thickened and white.

From a woman, who had long suffered from syphilis.

Presented by Mr. Mackrill.

DISEASES OF THE TEETH.

104. Cast of an Upper Jaw, with two supernumerary incisor teeth.

105. A similar Specimen.

106. Cast of an Upper Jaw, with one supernumerary incisor tooth.

107. A similar Specimen.

108. Cast of a Lower Jaw, with a supplemental bicuspid tooth.

The five preceding specimens were presented by Isidor J. Lyons, Esq.

109. Cast of a Face, with a molar tooth projecting through the integuments covering the left angle of the lower jaw.

Presented by J. C. Clendon, Esq.

110. Cast of an Upper Jaw, exhibiting the deformity of the incisor teeth produced by congenital syphilis.

Presented by A. Coleman, Esq.

111. Cast of an Upper Jaw with a perforation of the hard palate from syphilitic necrosis.

112. Cast of an Upper Jaw, showing the gap left by the necrosis of a portion of the alveolus after scarlet fever.

113. A similar Specimen. The necrosis was the result of syphilis.

114. Cast of the Upper Jaw of an old man, showing complete absorption of the hard palate.

He suffered from a perforation of the hard palate, which he plugged with a pad of calico, in order to prevent the passage of food into the nares. The continuous enlargement of the opening, from absorption, necessitated a corresponding enlargement of the plug, thus producing the result shown in the Specimen.

115. Cast of an Upper Jaw after the removal of the right superior maxilla.

116. Cast of an Upper Jaw, with an epulis springing up between the first and second left incisor teeth.

The six preceding Specimens were presented by Isidor J. Lyons, Esq.

DISEASES OF THE SALIVARY GLANDS.

117. Cast of a Face, with a swelling produced by inflammation of the parotid gland, and suppuration in its interlobular tissue. The patient had typhoid fever.

DISEASES OF THE STOMACH AND INTESTINES.

118. Model of the Stomach and Duodenum of a person poisoned with sulphuric acid.

HERNIA.

119. Cast of an Inguinal Hernia in a lad.

Presented by George Macilwain, Esq.

120. Cast of an Inguinal Hernia in a man.

121. Cast of a very large Inguinal Hernia in a man.

Presented by George Macilwain, Esq.

122. Cast of a large Inguinal Hernia in a man. The irregularities of the surface of the swelling appeared to be connected with thinning and partial absorption of the hernial sac.

123. Cast of two Inguinal Herniæ in a male. That on the right side contained

omentum, which could be easily returned; that on the left side contained part of the transverse arch of the colon, with omentum adherent to the lower portion of the sac.

123a. A similar Specimen.

124. Cast of an Inguinal Hernia in a woman.

125. Cast of an Inguinal Hernia in a woman.

126. Cast of a very large Inguinal Hernia in a woman. The swelling presented two chief portions, one of which was in the groin, the other in the labium.

Presented, with the two preceding casts, by George Macilwain, Esq.

127. Casts of two Inguinal Herniæ in a woman. That on the right side occupied only the groin; that on the left descended into the labium.

128. Cast of an Inguinal Hernia in a girl.

129. Cast of a Femoral Hernia in a man.

130. Cast of a Femoral Hernia in a man.

131. Cast of a Femoral Hernia in a man.

132. Casts of two Femoral Herniæ in a man; both are alike in size and shape.

Presented, with the two preceding casts, by George Macilwain, Esq.

133. Cast of a Femoral Hernia in a woman.

134. Cast of a Femoral Hernia in a woman.

135. Cast of a very large Femoral Hernia in a woman. It covered the front, and extended even beyond the outer border, of the upper part of the thigh.

Presented by George Macilwain, Esq.

136. Cast of a large Umbilical Hernia in a woman.

137. Cast of a Hernia, which protruded through the inferior aperture of a woman's pelvis into the lower part of her labium.

DISEASES OF THE LIVER.

138. Cast of a Liver, contracted and nodular from cirrhosis.

DISEASES OF THE LYMPHATIC GLANDS.

139. Cast of the Face and Neck of a woman, aged 20 years, exhibiting an enormous enlargement of the cervical lymphatic glands from lymphadenoma.

She died extremely emaciated after two or three years' illness.

Presented by D. H. Gabb, Esq.

140. Cast of a Neck, showing several rounded prominences due to infiltration of the cervical lymphatic glands with an Osteoid Growth.

From a man who had long suffered from osteo-arthritis; he died from an Osteoid Growth (osteo-sarcoma?) affecting the sternum, ribs, right clavicle, lymphatic glands of the neck and mediastinum, and the liver.

The case is reported by Dr. V. D. Harris in the *St. Bartholomew's Hospital Reports*, vol. xi, p. 268.

DISEASES OF THE BRAIN AND ITS MEMBRANES.

141. Cast of a Head, at the back of which, and surpassing it in size, is a Tumour, which appeared to originate in the dura mater, and was composed of medullary substance.

Presented by Joseph Hodgson, Esq.

142. Cast of the Head of James Cardinal, a man who was affected with hydrocephalus from his infancy, and whose case is described by Dr. Bright in the "Medical Reports." The head measures thirty-four inches and a half in circumference.

Presented by Thomas Wormald, Esq.

143. Model of a Hernia Cerebri, or protrusion of the brain after fracture of the skull.

144. Cast of part of a Boy's Forehead, in whom, after fracture of the skull, the brain protruded. The surface, however, healed over perfectly, and he lived in good health for many years after the injury.

Presented by J. S. Hichens, Esq.

DISEASES OF THE SKIN.

145. Xeroderma (*Ichthyosis simplex*). Cast of a Fore-arm and Hand taken from a young woman, aged 23 years. She was spare and fair-haired, never very robust, but not delicate. The disease existed from the time of birth. A sister and brother, aged 39 and 27 years, were similarly affected. Affection most marked on trunk and lower limbs; skin of face very smooth, with tendency to crack and peel off, like layers of collodion. Hands and fingers small, skin very hard and horny, and tightly bound down. Palms especially rough and hard, although no manual labour had ever been performed. No want of development in metacarpus, as observed in some of these cases by Sir Erasmus Wilson. Proximal phalanges seem unduly small.

See *St. Bartholomew's Hospital Reports*, vol. viii, p. 52, 1872.

146, 147. Ichthyosis Cornea (*Hystrix*). Two Casts taken from a lad, aged 13, years, the subject of this affection from time of birth. He had lived in the country all his life; was well grown and well nourished; hair light. At birth, small red spots were noticed upon the body; in three days there was "heaping up" upon them. The disease is especially developed upon the limbs, where it runs in linear masses, raised about a quarter of an inch from the unaffected skin. On the trunk are patches and streaks of xeroderma and slightly developed papillary ichthyosis, though nowhere, in this minor form, of a brown or grey colour. At intervals, upon the arms are spurs, of a horny nature, more than a quarter of an inch in length, and slightly curved. One spur is situated on the prepuce, like the claw of a kitten. There is a certain amount of symmetry as to the affection on the limbs. The elbows and knees are especially covered; and very dense growths have occurred in these parts, horny processes being set in close series, slightly movable upon their bases. The distal phalanx of the right little finger is incurved, as the result of an early injury. The palms of the hands are much affected, and the epidermis is thickened; the soles are merely thickened, and present no papillary ridges. The hands are somewhat small. There is a brown, fimbriated patch upon the umbilicus. Brown patches are found around and upon the nose and mouth, on the helices and lobules of the ears, and around the neck. A dense, prominent cluster is situated on either fold of the nates. The mouth, tongue, gums, and scalp are not

affected. There was no family history of any cutaneous abnormality. The grouped masses upon the knees, etc., singularly resemble clusters of *Balanidæ*, as met with upon marine rocks.

148. Cast of the Face of a young man, aged 20 years, affected with Elephantiasis Græcorum (True Leprosy).

He was born in Madras of parents of French extraction. Symptoms of leprosy first appeared when he was 12 years old.

See an account of the case by Dr. Dyce Duckworth in the *St. Bartholomew's Hospital Reports*, vol. x, p. 279.

149. Cast of the Arm of the same patient.

150. Cast of a Scrotum affected with Elephantiasis, from a man, aged 40 years. The disease had existed for fifteen years, and during the whole period had steadily increased. The mass was forty inches in circumference, and weighed sixty pounds.

151. Cast of a Lower Extremity, enormously enlarged by Elephantiasis.

152. Cast of a Leg and Foot. The back and sides of the foot are greatly enlarged, with a change of structure in the subcutaneous tissue, which resembled that of elephantiasis.

Presented by Page N. Scott, Esq.

153. True Keloid of Alibert. Cast taken from the sternal region of a gentleman, aged 65, who suffered from keloid for forty years—the longest recorded period of the duration of the disease. There was no history whatever of any pre-existing cicatrix, and hence the disease is believed to have been of the true, spontaneous or idiopathic variety.

Vide case recorded in *Transactions of the Clinical Society of London*, vol. iii, p. 118, 1870, and vol. xiii, p. 60, 1880.

154. Morphœa (*Keloid of Addison, Scleriasis*). Cast of the face of a young man, aged 20, of sallow complexion, undersized, with very little beard or whiskers. The disease came on gradually, and the change was not preceded by pain or any peculiar sensations. The patch is smooth, glossy, somewhat depressed, tense, slightly tawny and eburnated. It cannot be pinched up. The hairs have fallen out in the track of the disease, and the part no longer sweats. Sensibility is diminished over the patch. The affected region is supplied by the supra-orbital branch of the fifth nerve.

Vide St. Bartholomew's Hospital Rports, vol. viii, p. 55, 1872.
The disease began in March, 1872, and was still unaltered in June, 1873.

155. Cast of the Fore-arm and Hand of a middle-aged woman, affected with general scleroderma. The fingers, and the wrist and elbow joints, are flexed from contraction of the skin. The skin of the face and extremities was thickened, extremely tense, smooth, shining and inelastic; the skin of the trunk was only slightly affected.

156. Casts of two Hands affected with Erythema Papulatum.

157. Lichen Ruber (*Hebra*). Cast of the Leg of a lad, aged 19, universally affected with this malady. He was spare and undersized. The skin was covered with a red papular eruption, from which small silvery scales were thrown off. The papules were both discrete and in groups; some coalesced. Extensor surfaces more affected than flexor. Palms and soles much thickened. No change in the nails. Exposure to cold caused the parts to become very dusky and purple. Sweating occurred only in the axillæ. The hair of scalp, axillæ, and pubes was unaffected, but that on the body, generally, had the characters of lanugo. Papules occurred on the cicatrices left by vaccination,

thus illustrating that other than hair-follicular structures are involved in the disorder. The greatest benefit resulted from the local use of pitch.

Vide St. Bartholomew's Hospital Reports, vol. viii, p. 49, 1872.
A drawing of the case is preserved, No. 419.

158. Cast of an Arm affected with Eczema.

159. Eczema Papilliforme (*E. papillomatosum*, E. Wilson.) This cast was taken from a woman, aged 42, the subject of polysarcia. Her girth was five feet two inches round the waist, and her weight eighteen stones. The affection began fifteen months previously, on the right leg, in the form of small spots; blisters subsequently appeared, and a discharge commenced. Two months ago, the left leg was similarly affected for a time, but less severely. It is now quite free from the disease. There are numerous papilliform, fungating masses scattered over the surface, and fœtid pus is produced in considerable quantity. The feet and ankles are œdematous. The parts are painful, with much burning and itching sensations. This cast was taken after a mass of scab, and purulent crust had been removed by diligent poulticing. The disease appears to be most frequent upon the lower extremities, and to be mainly dependent upon venous stasis and lowered vitality of tissues.

160. Cast of the Back of a child affected with Urticaria persistans vel pigmentosa.

161. Cast of an Arm, showing extensive patches of Psoriasis (*Psoriasis guttata*).

162. Cast of a Leg, showing on its anterior surface several patches of Psoriasis covered with thick pyramidal crusts.

163. Casts of the Dorsal and Palmar surfaces of an Arm affected with Xanthelasma.

Vide also drawings of the eyelids from the same patient, Nos. 432, 433.

164. Tubercular Syphilide (*Syphilitic Lupus*). From a single woman, aged 22. There were patches also upon the back, between the shoulders. The colour was peculiarly vivid. There was no pain. The cicatrix-band in the forehead led, in common with some other points, to an erroneous early diagnosis of a lupoid affection. The patient confessed ultimately to a history of syphilis a year previously. There were no concomitants of syphilis. The frontal cicatrix was the result of an injury in childhood.

165. Same case after treatment.

Vide St. Bartholomew's Hospital Reports, vol. viii, p. 58, 1872.

166. Cast of the Face of a woman showing the eruption produced by the administration of iodide of potassium.

167. Cast of the Face of a man, showing an eruption produced by the administration of iodide of potassium. On the extremity of the nose, and on the left cheek the pustules have coalesced and formed a thick yellow crust.

168. Cast of an Arm showing the Eruption produced by iodide of potassium.

169. Model of part of a Leg, with an Ulcer of the Integuments associated with a varicose condition of the veins.

170. Lupus Hypertrophicus of the Face. Cast taken from a young woman.

171. Fibroma Molluscum (*M. fibrosum*, *M. simplex*, *M. non-contagiosum*). Cast taken from a labouring man, aged 35, who had lived in London (Holloway) all his life, and who had suffered from these growths for twenty-eight years. He

was of low mental development. His limbs were enormous, especially the forearms and hands. The tumours were especially developed on the trunk, in front and behind; one was on the chin. They diminished in number upon the extremities, and were all subcutaneous in the latter localities. On the body they were of all sizes, from that of a mustard seed to that of a small raisin; but one on the right scapular region,—which was apparently formed by a congeries of tumours, and was shrinking,—was as large as an apricot. Some were sessile, others were more or less pedunculated. Comedones were present upon many of the tumours. The palms and soles, and palate, were free from growths. Changes had evidently occurred in many of the smaller tumours, for they were reduced to the condition (apparently by absorption) of acrochordon.

172. Cast of a Hand and Forearm of the same patient.

173. Model of a large, deep, Epitheliomatous Ulcer of the integuments below and in front of the ear of a man who had been a chimney-sweeper.

174. Cast of a hand showing an ulceration of the skin in the fork between the thumb and index finger. The ulceration extends more especially along the normal fissures of the skin. The nature of the disease was not determined.

175. Acne Rosacea (*Gutta Rosacea*). Taken from a married woman, aged 29, who had always been healthy. There was no reason to suspect indulgence in strong drinks. The affection had lasted three years. The face was covered with a hideous series of purplish-red blotches and bosses, with suppuration at various points. The skin was most altered upon the chin, where an infiltration of new growth occurred, and projected for a quarter of an inch from the subjacent surface. The case corresponds to Hebra's *A. rosacea* of the second degree. Occasional outbreaks occur in this patient, though much less severe than formerly.

Vide St. Bartholomew's Hospital Reports, vol. viii, p. 57, 1872.

176. Molluscum Contagiosum. (*M. Sebaceum, interdum contagiosum.*) Cast taken from a young child. Two others of the family had the disease.

Vide St. Bartholomew's Hospital Reports, vol. viii, p. 65, 1872.

177. Model of Arms, in which the skin is affected in an extreme degree with Tinea Favus. In one arm the crusts are raised in thick heaps; in the other, the diseased skin is represented as exposed after their removal.

178. Model of a Great Toe, with separation of the nail, ulceration of its matrix, and inflammation of the adjacent skin. The name "Onychia maligna" has been given to this disease.

DISEASES OF THE TESTICLE AND ITS COVERINGS.

179. Cast of a Hydrocele, in which the tunica vaginalis yielded so unequally that the swelling imitated that of an inguinal hernia.

Presented by George Macilwain, Esq.

180. Cast of a double Hydrocele. The two sacs contained together seventy-six ounces of fluid.

Presented by Thomas Wormald, Esq.

181. Cast of a large medullary Tumour in the Groin. The testicles had not descended into the scrotum.

Presented by John Lawrence, Esq.

182. Cast of an exactly similar Tumour in the Groin, which subsided on the discharge of a large quantity of pus through an ulcerated opening in the skin over it. The testicle on this side had not passed into the scrotum.

DISEASES OF THE URETHRA AND PENIS.

182a. Various Models illustrating Venereal Disease in the male and female.

DISEASES OF THE UTERUS.

183. Cast of a Uterus which had been long inverted. It was found in a body, in a dissecting-room, by Professor Mackenzie, of Glasgow, by whom the specimen was preserved.

This and the four following casts were presented by J. B. Crosse, Esq., and illustrate specimens described and represented by him in his "Essay on Inversio Uteri."

184. Cast of an Inverted Uterus, occurring after an abortion at the end of four months of gestation.

185. Cast of a completely Inverted Uterus, taken one month after delivery, and immediately before its removal by ligature.

186. Cast of a Specimen, which was long considered to be an inverted uterus, but which on dissection proved to be "a fibrous tumour, originating just within the cervix uteri, obliterating the os uteri in its gradual progress, and at length depending in the vagina . . . and causing atrophy of the uterus." (Crosse, *loc. cit.*, Part II, p. 149, and Pl. 13, 14.)

187. Cast of the Tumour in the specimen just referred to.

DISEASES AND INJURIES INCIDENTAL TO GESTATION AND PARTURITION.

188. Model of the Abdomen of a woman, containing a fœtus which passed into it through a rupture of the wall of the uterus during labour.

Presented by Dr. Conquest.

189. Cast of Trunk of a woman, who died undelivered from uterine rupture.

190. Cast of same after laying open the abdomen.

191. Another Cast of same.

This and the two preceding Specimens were presented by Dr. Matthews Duncan.

192. Cast of the head of an infant, showing a large circular depression on the upper part of the forehead, produced by the pressure of the head against an abnormally prominent sacrum.

The case is described by Dr. Godson in the *Obstetrical Society's Transactions*, 1881.

193. Spoon-shaped depression of Temporal bone from contracted brim. Delivered by version.

Presented by Dr. Sidey.

194. Spoon-shaped depression of Temporal bone. Delivered of fifth child by long forceps. Mother same as in the preceding.

Presented by Dr. Sidey.

195. Cast of a perforated Fœtal Head.

196. Cast of Head delivered by cephalotribe.

This and the four preceding specimens were presented by Dr. Matthews Duncan.

DISEASES OF THE MAMMARY GLAND.

197. Model of a Breast affected with Cancer.

198. Model of a Breast with Cancer in a state of ulceration.

ANATOMY OF STUMPS AFTER AMPUTATION OF LIMBS.

199. Cast of part of a Hand, which remained after amputation of all the fingers and of their metacarpal bones near their carpal ends. The amputation was performed on account of an injury of the hand.

200. Cast of a Leg, after amputation just above the ankle.

201. Cast of a Leg, after amputation at the ankle-joint.

Presented, with the preceding, by W. J. Wilson, Esq.

202. Cast of a Leg, and of the part of a Foot which remained after amputation through the tarsus on account of injury. The tarsal bones remaining in the stump were the os calcis, astragalus, os scaphoid, and, probably, the os cuboides.

203. Cast of part of a Foot, which remained after amputation of nearly the whole of the tarsus and metatarsus on account of injury.

Presented by C. A. Key, Esq.

TUMOURS, AND ALLIED MORBID GROWTHS.

204. Cast of a Hemispherical Tumour, growing apparently from the frontal bone, which had been observed eight years, and had gradually increased in size for six years, when its growth ceased.

From a man, aged 27 years, who was admitted into the Hospital on account of the tumour and epileptic fits, to which he had been subject for five years.—See *Darker Ward Book*, vol. ii, p. 219.

205. Model of part of a Tumour, probably composed of fibro-cellular and adipose tissue, which was removed from the upper and inner part of the thigh of a young woman.

206. Cast of a large Tumour of the upper extremity and side of the chest.

207. Model of a large medullary or soft cancerous Tumour, situated in the lower part of the neck, and covering parts of the shoulder and chest.

208. Model of an ulcerated and exuberant Cancer on the front wall of an Abdomen.

209. Cast of a portion of the Abdomen and Thigh of a man in whom melanotic tumours existed by the side of the external iliac and femoral vessels, and projected in swellings that had the external characters of herniæ.

210. A cast of the Foot, a portion of which is preserved in Series L, No. 3338, with a large tumour springing from the second toe.

211. Cast of a Foot with a Medullary Tumour springing from the cellular tissue of the sheath of the flexor tendons, where they pass around the inner ankle.

A small tumour of about the size of a walnut had existed in this situation for twelve years,

growing very slowly, and causing very little inconvenience. Three months before the patient's admission into the Hospital, it had grown very rapidly, and had caused severe pain. The tumour was laid open under the belief that it was a ganglion, connected with the sheath of the flexor tendons. Subsequently the leg was amputated.

212. Cast of a deep-seated Nævus or Vascular Tumour, occupying the side of the lower part of the face and the upper part of the neck, in a female child, aged six months. It was first observed about six weeks after birth, and was then about the size of a pea. It rapidly increased until it attained the size exhibited in the cast. It was successfully treated by the introduction of setons, which were kept in for some months before the whole tumour disappeared.

Presented by Mr. Macilwain, by whom the case is described in the eighth volume of the *Medico-Chirurgical Transactions*.

URINARY CALCULI.

213. The Cast of a Calculus, which weighed nearly fifteen ounces. It was extracted by the lateral operation from the bladder of a man, aged 26 years, who had suffered from symptoms of stone from childhood. The wound healed perfectly, and he recovered from the operation, but was never afterwards a strong man. He died some years subsequently of disease of the kidneys and lungs.

214. Cast of a Calculus, weighing fourteen ounces and two drachms, which was extracted from a man's Bladder by Mr. Charles Mayo.

The case is described in the *Medico-Chirurgical Transactions*, vol. xi, p. 54.

215. Cast of a Calculus, removed from a man's Bladder by Mr. Cheselden.

The original is in the Museum of the Royal College of Surgeons.

216. Cast of a Calculus removed from a man's Bladder. From its shape it may be supposed to be formed by the union of two calculi.

217. Cast of a Calculus from the Bladder of a boy.

Presented by Richard Smith, Esq.

218. Cast of a Calculus, nearly as large as the preceding, removed from a man's Bladder by Mr. George Bell.

219. Cast of a Calculus, extracted from the Bladder of a man, 42 years old, by Mr. John Lawrence.

220. Casts of Calculi, naturally expelled from the Bladder of a woman, 50 years old.

221. Cast of a Calculus, expelled through the urethra of a lady, without previous dilatation. In its least diameters it measures an inch and an inch and a quarter; in length it measures two inches.

Presented with the preceding, by F. F. Giraud, Esq.

222. Cast of a Calculus expelled from the Urinary Bladder of a girl, 14 years old, after repeated dilatations of the urethra with sponge-tents. From its size and shape it may be supposed to have nearly filled the bladder.

Presented by George Witt, Esq.

223. Cast of a Calculus, extracted, after dilatation of the urethra, from the Bladder of a girl, 17 years old.

224. Cast of a large Calculus, removed from the Bladder of a horse, by Mr. William Field. The horse completely recovered.

SERIES LVII.

DRAWINGS* OF DISEASED OR INJURED PARTS.

DISEASES OF BONES.

1. Atrophy of the Femur, with bending and partial fracture of the shaft, accompanying disease of the knee-joint. (T. Godart.)

The specimen is preserved in Series I, No. 8.

2. Head of a maniac with enlargement and distortion of the cranium, resulting from the deposition of bony matter between the tables of the skull.

3. Diffuse Suppuration in the Medullary Tissue of the stump of a femur. Phlebitis also existed.

4. Section of a Tibia from a lad, aged 19 years; its cancellous tissue was infiltrated with pus, and in places of a deep claret colour, from congestion. The surface of the entire shaft was white and bare. (T. Godart.)

5. Section of a Tibia affected with Osteo-myelitis. Its vascularity is increased throughout. (T. Godart.)

From a boy, aged 8 years, who was admitted with acute inflammation of the tibia, and died of pyæmia.

5a. Section of a Femur which has undergone enlargement and sclerosis from chronic inflammation. The modelling of the various layers is not yet complete, the line of the original shaft being still plainly visible. (T. Godart.)

5b. A Tibia similarly affected, but the modelling process is complete, and all trace of the line of the original shaft is lost. (T. Godart.)

The Specimen is preserved in Series I, No. 103.

5c. Section of a Femur, removed by amputation at the hip-joint. Nearly the whole shaft had perished; and before the operation the bone had undergone so-called spontaneous fracture; but at no time, either before or after the operation, could any trace of suppuration be discovered. (T. Godart.)

The Specimen is preserved in Series I, No. 167.

5d. Section of a Femur, of which a large portion of the shaft has perished. There is no cloaca in the layer of periosteal new-bone surrounding the sequestrum. (T. Godart.)

5e. Section of a Tibia, showing a precisely similar condition, presumed to have

* All the following Drawings, to which no name is attached, were executed by Mr. William Henry Delamotte, Librarian.

belonged to the same person as the preceding, but taken from the opposite limb. (T. Godart.)

This and the preceding Specimens are preserved in Series I, Nos. 258, 259.

5f. Section of a Femur, nearly the whole shaft of which has necrosed.

The Specimen is preserved in Series I, No. 256.

6. Necrosis of part of the shaft of a Femur, with thickening of the surrounding periosteum. (T. Godart.)

7. Necrosis of part of the anterior wall of a Tibia.

The Specimen is preserved and described in Series I, No. 251.

8. Necrosis of a portion of the anterior wall of a Tibia; the sequestrum is exposed through an ulcer in the integuments. (W. H. Clift.)

9. Necrosis of the shaft of a Humerus, six weeks after a Compound Fracture. A line of florid granulations marks the separation between the white, dead, and the living bone, upon which an abundance of new bone has been formed. (T. Godart.)

10. Section of part of the Femur of a Rabbit. Into a hole, drilled through it, a peg, made of bone, was tightly driven. When examined, at the end of twelve weeks, a great portion of the peg had disappeared. (T. Godart.)

See some experiments performed by Mr. Savory, the specimens from which are preserved in the Museum.

11. Rickety curvature of both Tibiæ.

12. Syphilitic Necrosis of the Tibia. (T. Godart.)

13. Syphilitic Nodes on the Clavicles and left side of the Frontal Bone. (T. Godart.)

14. Drawing of an undergrown girl, aged 16 years, showing some of the effects of Congenital Syphilis. The teeth are "pegged," and the bridge of the nose is flattened; both eyes are affected with interstitial keratitis, and the right, which is also affected with kerato-globus, was absolutely blind. Large patches of necrosis of the cranial bones are exposed by ulceration of the scalp. (T. Godart.)

15. Hard ivory-like Osseous Tumour, involving the frontal and other adjacent bones. From a specimen in the Museum of the University of Cambridge. (J. L. Bailey.)

16, 17. A Hand, in which the metacarpal bone of the little finger was the seat of a bony tumour, and was removed by Jonathan Toogood, Esq., by whom the sketches were presented.

18. Enormous Cartilaginous Tumours in several of the bones of a hand. The hand was removed from a man, 56 years old, in whom some of the tumours had grown from his birth. (T. Godart.)

The Specimen is preserved and described in Series I, Nos. 412, 413.

19, 20. A Hand, with numerous Cartilaginous Tumours in its Metacarpal Bones and Phalanges.

The Specimen, amputated from a boy, is preserved and is described with the next following, in Series I, Nos. 414, 415.

21. The Metacarpal Bone of the other Hand of the same boy. It was amputated at the same time, and contained a similar tumour.

22. Very large softened and sloughing Cartilaginous Tumour, surrounding the upper two-thirds of a girl's tibia.

From a Specimen described in Series I, No. 425.

23. Part of a Medullary Growth involving the bones of the skull and the pericranium. (T. Godart.)

24. Another view of the same growth. (T. Godart.)

25. A Malignant Growth, involving the skull and the cervical glands. The circumference of the head, horizontally, was thirty-four inches. (T. Godart.)

26. A soft Sarcoma, occupying and enclosing the upper part of the humerus. It was of twelve weeks' growth. (T. Godart.)

26a. An enormous Tumour of the Humerus.

27. A Medullary Growth, involving the bones forming the wrist-joint, of twelve months' duration. From a woman 34 years of age. (T. Godart.)

28. A Sarcoma springing from the surface of the lower extremity of a Femur. (T. Godart.)

From a patient, aged 29 years.

29. A Medullary Tumour of the lower end of the Femur. (T. Godart.)

30. An immense Medullary Tumour in the Head of a Tibia.

The Specimen is in the Pathological Museum of the Royal College of Surgeons, No. 281A.

31. Section of a Myeloid Sarcoma of the lower end of a Femur. (T. Godart.)

32. A Myeloid Sarcoma containing Cysts, in the head of a Tibia. (T. Godart.)

The Specimen is preserved in Series I, No. 471.

33. A Myeloid Sarcoma of the lower part of the Tibia.

The Specimen is preserved in Series I, No. 472.

34. A Medullary Tumour originating in the Fibula, after a blow. (T. Godart.)

DISEASES OF JOINTS.

35. A Hip-Joint showing acute inflammation of the synovial membrane, with softening of the ligamentum teres. (T. Godart.)

From a boy, aged 14 years, who died of acute pyæmia, the first symptoms of which appeared ten days before death.

36. A Hip-Joint of which the synovial membrane and ligaments are swollen and intensely congested. The cartilages are superficially ulcerated. On the dorsum ilii, just above the margin of the acetabulum, is an abscess cavity communicating by a narrow track, through which a bristle is passed, with the acetabulum. A similar track passes through the bottom of the acetabulum, and communicates with an abscess cavity in the pelvis. (T. Godart.)

From a child, aged 12 years, who died in the Hospital with purpura hæmorrhagica.
The Specimen is preserved in Series II, No. 571.

37. Acute Rheumatic Inflammation of the Hip-Joint, especially of its synovial membrane. (A. M. McWhinnie.)

38. Acute Inflammation of the Synovial Membrane of a Knee-Joint, from a patient who died with pericarditis. (A. M. McWhinnie.)

39. Acute Synovitis of the Knee-Joint, with commencing disintegration of the cartilage of the internal condyle. (T. Godart.)

40. Pulpy degeneration of the Synovial Membrane of a Knee-Joint; there is œdematous thickening of the synovial membrane, which is brownish-red from congestion.

41. Lower Extremity of a Femur, showing irregular fragments of cartilage connected with the articular surfaces. After amputation for disease of the knee-joint. (T. Godart.)

42. Ulceration of the Articular Cartilage of the Femur from disease of the joint. (T. Godart.)

43. Left Lower Extremity of a child, after excision of the head and neck of the femur for disease. (T. Godart.)

44. A Cyst on the inner side of the Knee, of uncertain nature. (T. Godart.)

45. A Cyst on the inner side of the Popliteal Space, connected with disease of the knee-joint. (T. Godart.)

See a paper by Mr. W. Morrant Baker, in the *St. Bartholomew's Hospital Reports,* vol. xiii, 1877, p. 245.

INJURIES OF BONES (FRACTURES).

46. Spontaneous Fractures of the Femora, united with deformity. They were produced by very slight forces, in a lad suffering with extreme general atrophy. (H. B. Dobell.)

47. Fracture of a Tibia, five weeks after the accident. Plates of new bone are formed in and beneath the periosteum, adjacent to the line of fracture, and in the new tissue in the angles between the fragments. (H. B. Dobell.)

48. Section of the same specimen. (H. B. Dobell.)

49. Fracture of the neck of the Femur, united partly by fibrous tissue, and partly by bone.

The Specimen is preserved in Series III, No. 964.

50. Different drawings of the same Specimen as the preceding.

51. Sections of the head and neck of the opposite Femur from the same case as the preceding. They present the same appearances, but the line of fibrous tissue is uninterrupted by deposits of bone.

The Specimen is preserved in Series III, No. 965.

52. Ununited fracture of a Humerus, six months after the accident; the ends of the bones are covered with granulations.

The Specimen is preserved in Series III, No. 846.

53. Vesications and Ecchymosis, connected with a fracture of the olecranon, twenty hours after the injury. (T. Godart.)

54. Large Bullæ containing blood-stained serum, forming after fracture of both bones of the leg, with considerable bruising of the soft parts. The bullæ made their appearance in successive crops, between the fourth and eighth days from the injury. (T. Godart.)

The fracture was repaired in the usual time; but the patient suffered for some weeks from eczema.

INJURIES OF JOINTS (DISLOCATIONS, &c.).

55. A Shoulder-Joint, dissected. A few hours before death the humerus was dislocated beneath the coracoid process, without laceration of the capsule; and the vertical indentation seen on the posterior surface of the head of the humerus was probably produced by the impact of the head against the anterior margin of the glenoid cavity. (T. Godart.)

The Specimen is preserved in Series IV, No. 1019.

56. Old dislocation of a Humerus; its head rests on the inner side of the coracoid process.

The Specimen is in Series IV, No. 1020. There is a cast of the same in Series LVI, No. 37.

57. A Hip-Joint dissected after a recent Dislocation of the Femur backwards, with fracture of the posterior margin of the acetabulum and laceration of the obturator externus. (T. Godart.)

The Specimen is preserved in Series IV, No. 1036.

58. A Hip-Joint, showing a Dislocation of the Femur upon the body of the Ischium, with fracture of the posterior margin of the acetabulum. (T. Godart.)

The Specimen is preserved in Series IV, No. 1038.

59. A man, who recovered after shooting himself through the head with a pistol. The bullet entered at the right temple, and could be felt beneath the skin of the left temple, where it caused a projection. (T. Godart.)

The case is reported by Mr. T. Smith, in the *Lancet*, 1879.

DISEASES, DEFORMITIES, AND INJURIES OF THE SPINE.

60. White Induration (sclerosis) of the substance of two Vertebræ, in a case of diseased spine with paraplegia.

61. Sections of Lumbar Vertebræ, the bodies of which are infiltrated with a malignant growth. (T. Godart.)

From a man, aged 55 years.

62 to 68. A series of sketches of a specimen in which it is probable that an accidental injury had broken off the arch, with the spinous process, and inferior articular processes, of one of the lumbar vertebræ. The separated portion remained movably connected with the rest of the vertebra.

Presented by John Jessie, Esq. From a specimen in the Museum of the Royal College of Surgeons, Pathological Series, No. 983.

DISEASES AND INJURIES OF MUSCLES, TENDONS, AND BURSÆ.

69. Fatty degeneration of the Diaphragm. (T. Godart.)

70. Portion of a Psoas Muscle in a state of suppuration. The lungs and spleen also contained suppurating spots. (T. Godart.)

71. Drawing taken from a case of Progressive Muscular Atrophy. (T. Godart.)

72. Another drawing of the same case. (T. Godart.)

73. Photographs of a similar case.

74. A Sloughing fibrous Growth (Gumma?) in a Muscle. (T. Godart.)

75. A Bursa Patellæ. (T. Godart.)

DISEASES OF THE PERICARDIUM, AND OF THE HEART.

76. Acute hæmorrhagic Pericarditis; the heart is covered with reticulated, vascular, and blood-stained lymph.

77. Inflammation of the Pericardium, both surfaces of which are covered with soft, flocculent lymph. (T. Godart.)

78. Inflammation of the Pericardium, the surfaces of which are coated with firm lymph, arranged in irregular ridges. (T. Godart.)

79. A New-Growth (? lympho-sarcoma) in the mediastinum and pericardium. (T. Godart.)

See *Pathological Society's Transactions*, vol. xx, p. 102.

80. A similar Growth, occupying the anterior mediastinum and involving the pericardium. (T. Godart.)

81. Heart of a woman, 25 years old, who died with diabetes and phthisis. It weighed only five ounces and one drachm, and measured seven inches and three-quarters in its greatest transverse circumference. (W. J. Bayntin.)

82. Advanced Fatty Degeneration of the muscular tissue of the heart, with papillary vegetations upon the cusps of the mitral valve. (T. Godart.)

83. A Ball of Fibrin found in the left auricle. (T. Godart.)

The preparation is in Series VII, No. 1274.

84. A Heart with an old softened Clot clinging to the wall of the left ventricle. (T. Godart.)

85. (*a.*) Ante-mortem Clot in left auricle with stenosis of mitral valve. (*b.*) Surface of the same clot. (*c.*) Inner surface of same; the middle having broken down into a brain-like fluid. (T. Godart.)

From a case of mitral stenosis in a female, aged 34 years.

86. (*a.*) A firm yellow laminated Clot interlaced among the columnæ carneæ at the apex of the left ventricle. The aortic valves are healthy. (*b.*) The Pulmonary Valves seen from their ventricular aspect; they are greatly thickened by deposit of imperfectly organised material between their laminæ. (T. Godart.)

87. A Blood-clot taken from the Heart in a case of Leucocythæmia. (T. Godart.)

88. Purulent Infiltration, or, perhaps, Capillary Phlebitis, in a portion of the walls of a Left Ventricle.

89. Right Auricle and Ventricle covered with ecchymoses from a man, aged 29 years, who died of purpura hæmorrhagica. (T. Godart.)

90. Purpurous Ecchymoses on the surface of a Heart.

91. Extensive Deposits of Miliary Tubercles in the sub-serous tissue investing the heart. From a case of general tuberculosis. (T. Godart.)

92. Medullary Cancerous Tumour, extending from the endocardium into a right ventricle.

The case is related by Dr. Ormerod in the *Medico-Chirurgical Transactions*, vol. xxx, p. 39. The Specimen is preserved and described in Series VII, No. 1286.

93. Acephaloeyst Hydatids in the Wall of a Right Ventriele near the apex of a Heart. (W. J. Bayntin).

From the specimen in Series VII, No. 1295.

94. Vegetations upon the Mitral Valve, with large blood-vessels ramifying upon its auricular surface. Recent rheumatic endocarditis. (T. Godart.)

95. Vegetations, with deposits of Fibrin upon the endocardial surface of the left auriele, and upon the mitral valve. Ragged shreds of fibrin project from the valve into the interior of the ventricle. (T. Godart.)

96. Ulceration of, with Vegetations on the posterior cusp of Mitral Valve. (T. Godart.)

97. Acute Rheumatie Inflammation of the Aortic Valves.

98. Aortic and Mitral Valves, showing inflammatory deposits in process of absorption. (T. Godart.)

99. (*a.*) Vegetation on the Aortie Valves. (*b.*) A firm clot in the axillary artery, with (*c*) discoloration of the skin over it. (T. Godart.)

100. Left Ventricle and Aorta. The aortie valves are ulcerated and disorganised; to one cusp a mass of fibrin is adherent, which formed the lowest part of a long fibrinous clot extending up the aorta. (T. Godart.)

Vide *Pathological Society's Transactions*, vol. xix, p. 146.

101. Congestion of the Skin of the Face and Arms, from obstruction of the circulation by disease, and, perhaps, malformation of the heart.

DISEASES AND INJURIES OF ARTERIES.

102. Atheroma of the Aorta with thickened and contracted semilunar valves. (T. Godart.)

103. Extensive Atheroma of the Pulmonary artery in connection with mitral disease and hypertrophy of the right ventriele. The aorta was almost healthy. (T. Godart.)

104. Calcareous Degeneration of Atheromatous Deposits in the walls of an abdominal aorta. (T. Godart.)

105. An Aneurism of the transverse portion of the arch of the aorta bulging forward from the chest wall. (T. Godart.)

106. An Aneurism of the Axillary Artery filled with blood-clot after ligature of the subclavian artery. (T. Godart.)

From a man, aged 32 years, who died of pyæmia twenty days after the operation. The Specimen is preserved in Series VIII, No. 1515.

107. Arterial Angioma, so-called Aneurism by anastomosis of the arteries of the scalp.

108. Obstructed Middle Cerebral Artery, associated with deposits upon the valves of the heart. (T. Godart.)

DISEASES AND INJURIES OF VEINS.

109. Sketch of a Vein, containing softening Clots; and of lung tissue with deposits (secondary) from a case of pyæmia. (T. Godart.)

110. Tortuous and dilated Subcutaneous Veins, on the front of the trunk of a man, in whom it was believed that the vena cava superior, or one of the venæ innominatæ, was obliterated.

111. Distension of the Superficial Veins of the anterior surface of the Thorax and Abdomen owing to obstruction of the Superior Vena Cava by a lympho-sarcomatous tumour. (T. Godart.)

112. The inner surface of a Leg with several round sloughs, produced by the application of Nitric Acid to large varicose veins. (T. Godart.)

DISEASES AND INJURIES OF THE LARYNX AND TRACHEA.

113. Acute Inflammation and Œdema of the Epiglottis and Arytæno-epiglottidean folds. (T. Godart.)

114. A Larynx, acutely inflamed, with effusion of lymph and puriform fluid in its submucous tissue.

115. Œdema of the Epiglottis. (T. Godart.)

116. Œdema of one side of the Larynx. The patient died suddenly from the rupture of a thoracic aneurism.

117. Larynx, acutely inflamed, with circumscribed effusions of pus in its submucous tissue. The disease was connected with deep-seated inflammation in the fore-arm.

From a man between 40 and 50 years old.

118. A Larynx from a case of Croup, in which the exudation does not extend below the glottis. (T. Godart.)

119. Croupous Exudation confined to the cavity of the Larynx. (T. Godart.)

120. Croupous Exudation covering the mucous membrane of the larynx and trachea; below it was soft and easily detached; above, firm and closely connected with the tissue beneath. (T. Godart.)

121. Croupous Exudation lining the Larynx, Trachea, and Bronchi. (T. Godart.)

122. Respiratory Passages from a case of Croup. Membrane had been expectorated during life, but only a few shreds were found on the under surface of the epiglottis after death. (T. Godart.)

123. Diphtheritic False-membrane forming a complete tube, and extending down the trachea and right bronchus. (T. Godart.)

124. A Larynx and adjacent structures, showing some of the effects of syphilitic disease. (T. Godart.)

The specimen is preserved in Series X, No. 1634.

125. Syphilitic Ulceration of the Larynx. (T. Godart.)

126. A Papilloma springing from the neighbourhood of the left vocal cord. (T. Godart.)

127. Epithelioma springing from the mucous membrane around the orifice of the larynx, which it nearly closed.

From a man, aged 60 years, on whom tracheotomy was performed when in a suffocating condition.

128. Bulb-shaped Tumour, suspended from the mucous membrane of the Pharynx, by the side of the epiglottis and right arytænoid cartilage. (T. Godart.)

From a specimen in Series X, No. 1653.

129. Larynx and Trachea after tracheotomy, showing ulceration of the trachea below the wound.

DISEASES AND INJURIES OF THE PLEURA, BRONCHIAL TUBES, AND LUNGS.

130. Inflammation of the Pleura, showing the vascularity of the tissue subjacent to the lymph effused. (T. Godart.)

131. Empyema, with acute Inflammation of the False Membrane covering both surfaces of the Pleura.

132. Capillary Bronchitis. (T. Godart.)

133. Dilatation of a Bronchial Tube in the lower lobe of a lung. The other parts of the lungs were emphysematous, but the above-mentioned portion was bound down by old adhesions, collapsed and atrophied. (T. Godart.)

134. Emphysema of the Fibrous Septa of a Lung (interstitial Emphysema). (T. Godart.)

135. Cirrhosis of the lower Lobe of left Lung. (T. Godart.)

136. Pleuro-pneumonia from a strumous subject.

137. A similar Specimen.

138. Lobular Pneumonia. (T. Godart.)

From a child 12 months old.

139. Purulent Infiltration of the lower Lobe of a Lung, with old clots in the branches of the pulmonary artery: the upper lobe is congested, with circumscribed effusion of blood.

140. Inflamed and Gangrenous Lung. (T. Godart.)

141. Gangrene of a large portion of a Lung.

142. Hæmorrhagic Infarcts in a congested Lung, connected with disease of a Heart. (T. Godart.)

143. Section of the Lung of a boy who died of Pyæmia. The whole substance is intensely congested, with, here and there, points of commencing suppuration. (T. Godart.)

144. Part of the Lung of a boy, aged 8 years, who died of pyæmia. (T. Godart.)

145. Secondary deposits in the Lungs in pyæmia. (T. Godart.)

146. Ecchymoses in the Lung of a child, who died after an illness of three days, which commenced with acute necrosis of the tibia.

147. Lung of a Dog, into whose veins some putrid fluid, previously filtered, had been injected twenty-eight, twenty-five, and twenty-one days before death. Experiment performed by W. S. Savory, Esq. (T. Godart.)

148. Ecchymosis in the Lung of a Dog, into whose femoral veins some Oxide of Zinc suspended in distilled water had been injected twice (respectively a week and a fortnight) before he was killed. (T. Godart.)

149. A similar specimen, produced by the injection of disintegrated fibrin. (T. Godart.)

150. Pulmonary Apopolexy accompanying disease of the mitral valve. (T. Godart.)

151. Diffused and spotted Pulmonary Apoplexy in a Tubercular Lung. It was connected with profuse hæmoptysis.

152. Spotted Pulmonary Apoplexy.

153. Pulmonary Apoplexy in an Emphysematous Lung. Repeated hæmorrhages into the trachea occurring from an aneurism of the aorta.

The Specimen is preserved in Series XI, No. 1708.

154. Pallid Lung, from a case of spanæmia with obstruction of the splenic veins. (T. Godart.)

155. Miliary Tuberculosis of the Lung of a child. (T. Godart.)

156, 157, 158, 159. Illustrations of Phthisis Pulmonalis. (T. Godart.)

160. Inflammation of an old Tubercular Cavity in the upper part of a Lung.

161. Tubercular cavity of a Lung, from a vessel in the wall of which fatal hæmorrhage occurred. (T. Godart.)

The Specimen is in Series XI, No. 1727.

162. A Lung filled with closely packed nodules of Cartilage. Natural size. (T. Godart.)

163. A New-Growth (? Lympho-sarcoma) of the anterior Mediastinal and Bronchial Glands, involving the lung to a slight extent, and compressing the right bronchus. Breaking down of a portion of the new-growth occurred, whence fatal hæmorrhage arose. (T. Godart.)

From a man, aged 39 years.—Vide *Pathological Society's Transactions*, vol. xix, p. 64.

164. Section through a Lung exhibiting Malignant Disease (? Lympho-sarcoma) partly spreading into its interior along the Bronchial tubes, and connected with a similar growth in the Bronchial and Mediastinal Glands; partly involving directly the pulmonary tissue. (T. Godart.)

165. A Lung infiltrated with a soft Medullary Tumour.

166. Section of a Tumour lying beneath the pleura at the base of a lung; it consisted of granular and fibrous material (? syphilitic). (T. Godart.)

167. A recent clot in the Pulmonary Artery, from a case of injury to the foot. The clot was the immediate cause of death. (T. Godart.)

168, 169. Clots, partially organised and adherent, in branches of the Pulmonary Arteries.

The Specimens are in Series XI, Nos. 1749, 1750. No. 168 is engraved in the *Medico-Chirurgical Transactions*, vol. xxvii, Pl. III, fig. 3.

170. An old Clot in the Pulmonary Artery. (T. Godart.)

171. Aneurism of a branch of the Pulmonary Artery lying in the wall of a Vomica. (T. Godart.)

DISEASES AND INJURIES OF THE NOSE, MOUTH, TONGUE, PALATE, AND FAUCES.

172. Syphilitic Ulceration of the Nose of a girl, aged 15 years. (T. Godart.)

173. A Tumour growing from the Antrum. (T. Godart.)

174. A case of Cancrum Oris. (T. Godart.)

From a male child, aged 20 months. In the course of the disease, which proved fatal, the intermaxillary bones necrosed and came away.

175. Cancrum Oris. (T. Godart.)

176. A large Ranula in a boy, aged 12 years. (T. Godart.)

177. Hypertrophy of the Tongue of a child, aged 3 years, in whom the disease had existed for fifteen months, occurring subsequently to an attack of Stomatitis. (T. Godart.)

The disease was removed by the écraseur on two occasions, but after removal there was still a tendency to excessive growth. The structure of the portions removed was apparently that of healthy tongue tissue, without excess of vascular tissue.

178. Ichthyosis Linguæ.

179. Xanthelasma of the Tongue. (T. Godart.)

180. Syphilitic Gummata in the Tongue. (T. Godart.)

181. Tertiary Syphilitic Disease of the Tongue (ulcerating Gumma). (T. Godart.)

182. A Tertiary Syphilitic Ulcer in the middle of the dorsum of the Tongue. (T. Godart.)

183, 184, 185. Tertiary Syphilitic Disease of the Tongue. (T. Godart.)

186. Tubercular Ulceration of the dorsum of the Tongue, from a lad, aged 19 years, who died of phthisis of the lungs and larynx. (T. Godart.)

The tongue is preserved in Series XII, No. 1781.
See *Pitcairn Ward Book*, vol. vi, p. 82.

187. A growth, apparently of a medullary cancerous nature, on a Tongue.

188. The same; the growth being nearly detached, and the cervical lymphatic Glands enlarged. The growth is in No. 1793, Series XII.

Presented, with the preceding, by Robert Ceely, Esq.

189. Section of a Boy's Head, with a Tumour, apparently fibro-cellular, in the soft palate.

The tumour was of slow growth. The patient was suddenly suffocated.
The Specimen is in Series XII, No. 1803.

DISEASES OF THE TEETH.

190. A Molar Tooth, projecting through the integuments over the angle of the jaw, in which it appeared to be firmly rooted.

A similar Specimen is preserved in Series XIII, No. 1809.
Presented by J. C. Clendon, Esq.

191. The front teeth blackened, with a black line along the gums, from Mercurial Poisoning. (T. Godart.)

Taken from a looking-glass manufacturer.

DISEASES AND INJURIES OF THE PHARYNX AND ŒSOPHAGUS.

192. Congestion of the lower part of an Œsophagus, with striped blackening of the blood: superficial ulcers in the cardiac portion of the stomach, with blackened effusions of blood (hæmorrhagic erosions). (T. Godart.)

193. Cancer of the Pharynx in a state of Ulceration. (T. Godart.)

194. Epithelioma of the Œsophagus. (T. Godart.)

195. Cancerous Stricture of the Œsophagus, from a patient on whom gastrostomy was performed. (T. Godart.)

196. Œsophagus, from a case of poisoning with Sulphuric Acid. (T. Godart.)

197. Stricture of the Œsophagus consequent on swallowing Sulphuric Acid. (T. Godart.)

DISEASES OF THE PERITONEUM, OMENTUM, AND MESENTERY.

198. The abdomen laid open from a case of acute peritonitis. (T. Godart.)

199. Œdema of Sub-serous Tissue. From a case of acute peritonitis. (T. Godart.)

200. Abdominal Viscera, from a case of chronic peritonitis with development of small cysts in the effused lymph. The liver has undergone extreme fatty degeneration. (T. Godart.)

201. Simple Cysts attached to the upper and front surface of the stomach. (T. Godart.)

202. Unusual form of abdominal distension in Ascites, depending on the relaxation of the anterior wall of the abdomen consequent on frequent gestation. (T. Godart.)

DISEASES AND INJURIES OF THE STOMACH.

203. Spontaneous Digestion of a Stomach after death: large portions of the whole thickness of its walls are destroyed. (T. Godart.)

From a girl, aged 19 years, who died with inflammation of the membranes of the brain, in a state of coma.

204. Portion of a very large Stomach, from a man, 73 years old. Extreme fatty and calcareous degeneration existed in the arteries. (T. Godart.)

205. Excessive Congestion of the Stomach, from a case of chronic Bronchitis. (T. Godart.)

206. Intense Congestion of the Mucous Membrane of a Stomach; not connected with poison or any apparent disease of the organ.

207. Drawing of a Stomach, the mucous membrane of which was thickened and mammillated.

The Specimen is in Series XVII, No. 1906.

207a. Enlarged Glands at the root of the Tongue, from the same case.

208. Polypi of the Mucous Membrane of the Stomach. (T. Goddart.)

The Specimen is in Series XVII, No. 1921.

209. Hard Cancer of a Stomach, with hypertrophy of the muscular coat. The organ is much contracted.

210. Cancer of the Stomach and Œsophagus. (T. Godart.)

211. Œsophagus and Stomach, after poisoning, in fifteen hours, with Nitric Acid.

The Specimen is in Series XVII, No. 1870.

212. Alimentary Canal showing the condition after poisoning by Nitric Acid. Death occurred in twelve hours.

213. The effects of poisoning by Nitric Acid. (T. Godart.)

214. Œsophagus and Stomach from a case of poisoning with Nitric Acid. (T. Godart.)

215. Partial separation of a Slough of the Mucous Membrane of a Stomach, ten days after poisoning with sulphuric acid.

The Specimen is in Series XVII, No. 1943.

216. The effects of poisoning by Hydrochloric Acid. (T. Godart.)

217. A Stomach, after rapid poisoning with Oxalic Acid.

The Specimen is in Series XVII, No. 1948.

218. Œsophagus and Stomach, showing the effects of poisoning by Oxalic Acid. (T. Godart.)

219. Intense congestion and ecchymosis of the Stomach and Intestine, after poisoning with Liquor Ammoniæ. (T. Godart.)

The Specimen is in Series XVII, No. 2044.

220. Pharynx, Œsophagus, Stomach, and Intestines, from a case of poisoning by strong Liquor Ammoniæ. (T. Godart.)

221. Stomach, and portion of Intestines, after poisoning with Perchloride of Mercury. A mass of the salt lay imbedded in the stomach, and its effects are there most deeply marked.

222. Stomach, after poisoning with concentrated solution of impure Carbonate of Potash (pearl-ash). Death occurred in thirty hours. (J. Paget.)

223. Stomach from a case of poisoning with Bichromate of Potash. (T. Godart.)

224. The Œsophagus and Stomach of a man, aged 51 years, who died from exhaustion due to constant sickness eight weeks after swallowing accidentally a quantity of Burnett's disinfecting fluid.

225. A Stomach with the abdominal integuments and ribs from a case in which Gastrostomy was performed for stricture of the œsophagus. (T. Godart.)

226. Interior of a Stomach from a case in which Gastrostomy had been performed. (T. Godart.)

DISEASES AND INJURIES OF THE INTESTINES.

227. Great distension of the Rectum and large Intestine consequent on Imperforate Anus. (T. Godart.)

228. Follicular Ulceration of the Small Intestine. (T. Godart.)

229. Enlargement of the Solitary Glands of the Intestine in a case of Asiatic Cholera. (T. Godart.)

230, 231. Similar specimens. (T. Godart.)

232. The Intestine from a case of Leucocythæmia.

233. Acute Dysentery. (T. Godart.)
From a girl, aged 12 years.

234 to **244.** Illustrations of Dysentery.

245. Chronic Dysenteric Ulceration, with blackening of the mucous membrane of a Cæcum. (J. Paget.)

246. Condition of the Intestine in Enteric Fever at the fourth or fifth day. (T. Godart.)

247. Typhoid Ulceration of the Intestine in the early stage of the disease. (T. Godart.)

248. Ulceration of the small Intestine, Pharynx, and Vagina: from a case of Enteric Fever. (T. Godart.)

249. A Peyer's Patch, extremely enlarged, prominent, and partially ulcerated; from a case of Enteric Fever.

250. Intense congestion of part of an Ileum, with superficial sloughing in the situation of Peyer's patches: from a case of Enteric Fever.

251, 252. Similar changes in a Colon, but with darker and more livid congestion.

253. Ileum, with ulceration of some of Peyer's patches, and subsequent hæmorrhage from them, blackening the ulcerated surfaces. (T. Godart.)

254. Typhoid Ulceration, with perforation of the lower portion of the ilcum. From a case of Enteric Fever. (T. Godart.)

255. Healcd Typhoid Ulcers. (T. Godart.)

256. Small Tubercular Deposits beneath the mucous membrane of an Ileum; some softened, some ulcerated.

257. Tubercular Ulceration of the small Intestine. (T. Godart.)

258. Small Intestine, with its mucous membrane highly vascular and ulcerated in transverse bands. (T. Godart.)

259. The serous surface of a portion of small Intcstine, showing deposit of tubercles in the sub-scrous tissue at the base of extcnsivc ulcers.

260. Peculiar staining of the mucous membranc of the small Intestine by the contents of the bowcl.

DISEASES AND INJURIES OF THE RECTUM.

261. Syphilitic Ulceration of the Rectum and adjoining portion of the Colon. (T. Godart.)

The Specimen is in Series XIX, No. 2058.

262. Cancerous Stricture of the Rectum. (T. Godart.)

263. Intussusception of the Jejunum. (T. Godart.)

DISEASES AND INJURIES OF THE LIVER.

264. Fatty Degeneration of the Liver, not connected with phthisis. (T. Godart.)

265. Commencing Fatty Degeneration of the Liver. (T. Godart.)

266. Cirrhosis with Fatty Degeneration of the Liver. From a child, aged 11 years. (T. Godart.)

267. Portion of a Liver, showing great increase of the connective tissue along a portal canal, with dilatation of the bile ducts. (T. Godart.)

268. A Liver, throughout the substance of which are numerous abscesses. (T. Godart.)

269. Section of a Liver, enlarged, indurated, brawny, and pale yellowish-brown, with fatty degeneration.

270. "Nutmeg Liver." From a case of heart disease. (T. Godart.)

271. Degeneration of the Liver, associated with cardiac disease. (T. Godart.)

272. Section of the Liver, from a case of acute Yellow Atrophy. (T. Godart.)

273. Branches of the Portal Vein filled with soft yellow clots; secondary to dysenteric ulceration of the intestine. (T. Godart.)

274. Liver, with purulent deposits, and acute inflammation and suppuration of the branches of the Vena Portæ.

275. A Liver, with suppuration extending along the portal canals. (T. Godart.)

276. Section of a Liver, exhibiting a number of syphilitic gummata. The remainder of the organ is in an advanced stage of amyloid degeneration.

277. Melanotic Sarcoma of the Liver.

The Specimen is preserved in Series XXI, No. 2209.

278. A Liver, exceedingly enlarged by a rapid growth of melanotic Tumours disseminated through it.

See Cast No. 138.

279. A Liver, infiltrated with nodules of cancer.

280. Medullary Cancer occupying the Liver. (T. Godart.)

281. A large Nævus of the Liver. (T. Godart.)

The Specimen is in Series XXI, No. 2224.

282. Liver, with a Cyst containing Acephalocyst Hydatids; the cyst-wall is thick.

283. Liver of a Pig, with numerous Cysts containing Echinococci. (T. Godart.)

DISEASES AND INJURIES OF THE GALL-BLADDER AND BILIARY DUCTS.

284. Congenital atresia of the Hepatic Duct, and consequent engorgement of the liver with dark-green bile contained in dilated canals terminating in a soft tumour which bulged at the transverse fissure. (T. Godart.)

285. The Gall-Bladder of a woman, the extremity of which passed through the right femoral ring and formed a strangulated hernia. (T. Godart.)

The Specimen is in Series XXII, No. 2114.

DISEASES OF THE PANCREAS.

286. A Pancreas, infiltrated with numerous Tubercular Deposits. (T. Godart.)

The Specimen is in Series XXIII, No. 2272.

DISEASES OF THE LYMPHATIC GLANDS AND VESSELS.

287. Lumbar Lymphatic Glands, from a middle-aged man. Like all the lymphatic glands examined, they were enlarged and more than naturally vascular: in some instances, they had undergone caseous degeneration. (W. J. Bayntin.)

288. Lymphadenoma of the Cervical Lymphatic Glands. (T. Godart.)

DISEASES OF THE SPLEEN.

289. A Spleen, showing Amyloid degeneration of the Malpighian bodies. (T. Godart.)

290. Section of the Spleen of a child, showing enlarged Malpighian bodies. (T. Godart.)

291. Capillary Phlebitis of Spleen.

292. Portion of Spleen, greatly enlarged, and in one part containing a partially decolorised infaret. (T. Godart.)

293. Spleen, with numerous small circumscribed Tubercular Deposits, many of which are softened at their centres.

Presented by S. G. Lawrence, Esq.

294. Spleen, with abundant diffuse Tubercular Deposits. (T. Godart.)

The Specimen is in Series XXV, No. 2301.

295. A Spleen, containing Tubercular Deposits. (T. Godart.)

296. A large Hydatid projecting from the superior surface of the Spleen, and adherent to the under surface of the diaphragm. (T. Godart.)

The Specimen is preserved in Series XXV, No. 2306.

297. Blood from a case of Leukæmia, twenty-four hours after it had been taken from the body. (T. Godart.)

DISEASES OF THE THYROID GLAND.

298. Dissection of a Bronchocelo. The case is published in the *Lancet*, July 13, 1861, by Mr. McWhinnie.

DISEASES OF THE SUPRA-RENAL BODIES.

299. Hypertrophied Supra-renal Capsule. (T. Godart.)

300. Left Supra-renal Capsule, showing enlargement of its cortical layer. (T. Godart.)

301. Tubercular disease involving the supra-renal capsules. (T. Godart.)

302. Supra-renal Capsule, containing Tubercular Deposits.
From a Specimen in Series XXVII, No. 2325.

302a. A Supra-renal Body, with the kidney infiltrated with caseous material.
The patient had discoloration of the mammæ and scrotum.

303. A Supra-renal Capsule, filled with calcareous tubercular deposit. (T. Godart.)

304. Supra-renal Capsules and Skin, from a case of Addison's disease. (T. Godart.)

305. Face of a man, with deep bronzing of the skin; he had other symptoms of Addison's disease.

DISEASES AND INJURIES OF THE KIDNEY.

306. A Kidney in an early stage of acute nephritis, with extravasation of blood into its Malpighian capsules. (T. Godart.)

307. Large white Kidney. (T. Godart.)
From a man, aged 30 years.

308. View of the outer surface of the left Kidney, from a case of dropsy after scarlet fever. (T. Godart.)

309. Section of a Kidney from a case of dropsy after scarlet fever, in which the exterior of the pyramids were in a state of extreme fatty degeneration. (T. Godart.)

310. Kidney of a child, from a case of dropsy after scarlet fever. (T. Godart.)

311. Mottled Kidney at an early stage of degeneration. (T. Godart.)

312. Kidney, enlarged, scarred, granulated, and containing minute yellowish deposits.

313. Kidney, similarly diseased, but more contracted and more coarsely granular. (S. H. Swayne.)

314. A granular contracted Kidney.

315. Contracted and granular Kidney, in the last stage of Bright's disease. (T. Godart.)

316. Kidneys much enlarged, softened, and infiltrated with small deposits of pus. The pelves and ureters are dilated. The patient, a young man, was suddenly

attacked with renal symptoms after the passage of a catheter for the stricture in the anterior portion of the urethra, shown in the drawing. (T. Godart.)

The penis is preserved in Series XL, No. 2857.

317. Kidneys, acutely inflamed, and with minute purulent deposits in their substance; after a burn.

318. Left Kidney in a state of suppuration following the application of an enormous blister. (T. Godart.)

The right kidney was in a still more advanced stage of suppuration.

319. A Kidney occupied by yellow fibrinous infarcts. (T. Godart.)

320. Exterior of a Kidney similarly affected. (T. Godart.)

321. Kidney, with extensive and partially softened tubercular deposits.

322. Part of a Kidney, showing the appearance presented by extensive tubercular disease of its calyces and tubuli. (T. Godart.)

323. A Kidney, the dilated pelvis and calyces of which are filled with caseous material. (T. Godart.)

324. (*a.*) Left Kidney, containing a Calculus. (*b.*) Large Calculus and specimens of smaller calculi from the right kidney of the same patient. (*c.*) Also a section of a gouty Great Toe. (T. Godart.)

325. A Kidney, showing Cysts upon its surface. (T. Godart.)

326. Group of Cysts at lower end of the Kidney, from a man, aged 65 years. (T. Godart.)

There was great dilatation of the ureter and pelvis of both kidneys, with atrophy of the parenchyma consequent on obstruction to the passage of urine due to a valvular fold of mucous membrane at the neck of the bladder.

327. Cystic Degeneration of the Kidney. (T. Godart.)

328. Section of a Kidney, showing a blood-clot, which fills the pelvis. (T. Godart.)

329. Medullary disease of the right Kidney, from a female child, aged 6 years. The mass weighed four and a half pounds. (T. Godart.)

DISEASES AND INJURIES OF THE URINARY BLADDER.

330. Extreme Ecchymosis of the mucous membrane of the Urinary Bladder, from a case of enteric fever. Urine had been repeatedly drawn off by the catheter. (T. Godart.)

331. Tubercular Ulcer in a Urinary Bladder, and tubercular deposits in an epididymis and testicle. (T. Godart.)

DISEASES AND INJURIES OF THE BRAIN AND ITS MEMBRANES.

332. Dura Mater, with a thin layer of blood-clot on its internal surface. (J. G. Shepherd.)

333. A Blood-clot in the sac of the arachnoid on the surface of the Left Hemisphere, probably about three months after the extravasation had taken place. (T. Godart.)

334. Anæmia of a Brain, with hæmorrhage in the arachnoid sac, in a case of Purpura.

335. Purulent infiltration into part of a Pia Mater.

335a. A Brain, with a very thick layer of pus effused upon its surface. (T. Godart.)

From a boy aged 3 years. A small collection of pus was found in the mastoid cells.

336. Effusion of Lymph over a Pons Varolii.

337. Medullary Cancer of the Dura Mater, affecting the inner table of the skull-cap. (T. Godart.)

Vide Pathological Society's Transactions, vol. xx, p. 325.

338. Atrophy of the Corpus Striatum and Optic Thalamus on the right side. (T. Godart.)

From a female, aged 20 years. The right middle cerebral artery was obliterated, and there was extensive disease of, with vegetations on, the mitral and aortic valves. Hemiplegia had existed for the last three years of life.

339. Cerebral Apoplexy, with ecchymosis, softening, and discoloration of the adjacent part of the brain. (T. Godart.)

340. Apoplexy, in which blood effused into the optic thalamus appeared to have subsequently escaped into the lateral ventricle through a small round aperture. (T. Godart.)

341. Blood extravasated into the substance of the Cerebral Hemisphere, and into the Corpus Callosum, the coagula extending into the ventricles of the brain. (T. Godart.)

342. Apoplexy with laceration of the under surface of the right middle lobe of the Brain. (T. Godart.)

343. Left Hemisphere of the Brain. Situated posteriorly near the median fissure a recent extravasation of blood is depicted, and beneath the red vascular patch on the surface of the hemisphere was an older extravasation. (T. Godart.)

From a female, aged 53 years.

344. Effusion of blood into the substance of the Pons Varolii, Crura Cerebri, and into the fourth Ventricle. (T. Godart.)

345. An Apoplectic Clot in the Pons Varolii and Crura Cerebri. (T. Godart.)

346. An Apoplectic Clot in the Pons Varolii and floor of the fourth Ventricle.

347. Recent Hæmorrhage into the substance of the Pons Varolii. (T. Godart.)

348. Old partially decolorised Clot in the substance of the Optic Thalamus. (T. Godart.)

349. Blood extravasated into the cerebral hemispheres in various stages of absorption. (T. Godart.)

350. Cerebral Apoplexy; there was an effusion of five ounces of blood from rupture of a small aneurism of a middle cerebral artery.

The Specimens are in Series VIII, Nos. 1518, 1519.

351. Extreme Congestion of the Brain and its Membranes. (T. Godart.)

From a girl, aged 16 years, who, after delirium and vomiting, became comatose and died in that condition. No structural disease of the brain or its vessels was discovered.

352. Partial softening of a Cerebrum with small effusions of blood.

353. Softening of portions of Brain Substance with small hæmorrhagic effusions. In the anterior portion of the right hemisphere is a mass of yellow deposit. (T. Godart.)

354. Inflammation with plastic exudation into the substance of the left hemisphere of the brain. (T. Godart.)

355. Sloughing of a portion of a Brain, eleven days after a wound, and five days after ligature, of a common carotid artery.

The specimen is in Series XXX, No. 1377. The case is described by Mr. Vincent in the *Medico-Chirurgical Transactions*, vol. xxxix, p. 38.

356. Abscess in a Cerebrum; the green colour of the granular internal surface of the abscess is well marked.

357. Large sloughing Abscess of the Brain after compound fracture of the skull.

358. Abscess in a hemisphere of the Brain. (T. Godart.)

359. A child affected with Paralysis and Contraction of the limbs from sclerosis of the cerebral cortex. (T. Godart.)

The case is described by Dr. Norman Moore, in the *St. Bartholomew's Hospital Reports*, vol. xv, 1879.

360. Another sketch of the same child. (T. Godart.)

361. The surface of the Cerebral Hemispheres from a case of Tubercular Meningitis. (T. Godart.)

362. Caseous Tubercular Tumour in the right Crus Cerebri. (T. Godart.)

363. Caseous Tumours of the Cerebellum and Pons Varolii. (T. Godart.)

364. Tubercular Deposits in the Pons Varolii. (T. Godart.)

365. Glioma in the left Cerebral Hemisphere. (T. Godart.)

366. A Tumour in the left Cerebral Hemisphere, pushing over the left central ganglia, and pressing on the right hemisphere. (T. Godart.)

367. A New-Growth, occupying the left Optic Thalamus. (T. Godart.)

368. Masses of New-Growth in the Cerebrum. (T. Godart.)

369. Tumour of uncertain nature, in a Cerebrum.

370. Tumour, probably of sarcomatous structure, attached to the cerebellar surface of a petrous bone, and pressing upon the cerebellum. (H. B. Dobell.)

From a Specimen in Series XXX, No. 2469.

371. A Cyst in the Pineal Gland from a fatal case of convulsions (? epileptic). The only lesion found. (T. Godart.)

372. Portion of a Brain, with loose vascular tissue filling up a space from which a large portion was lost from hernia cerebri. The patient died thirty years after the injury.

373, 374. Brains of two Rabbits which, after death, were suspended so that the blood might gravitate in the one from, in the other towards, the head. The brain and its membranes, in the former, are pale, showing scarcely a trace of blood; those in the latter have their blood-vessels over-filled.

These and the following sketches were made from Rabbits on which some of the experiments were performed which are recorded by Sir G. Burrows, in his "Essay on the Disorders of the Cerebral Circulation."

375, 376. Brains of two Rabbits, of which one was killed by hæmorrhage, the other by strangulation. The contrast in the respective states of their blood-vessels is nearly as marked as in the preceding.

377, 378. Similar sketches of the Brains of two Rabbits, of which, after death, by apnœa, one was suspended with the head upwards, and the other was laid horizontally. The contrast is similar to that shown in 373, 374, but less marked.

379, 380. Brain of two Rabbits which, after death by drowning, were placed in the same positions as the preceding.

DISEASES AND INJURIES OF THE SPINAL CORD.

381. Apoplexy of the Membranes of a Spinal Cord, with disks of substance like cartilage on the arachnoid.

The preparation is in Series XXXI, No. 2531.

382. Effusion of Lymph beneath the arachnoid membrane covering the pons, medulla oblongata, and spinal cord, of a child who died after severe and almost constant opisthotonos.

383. Acute Softening of the Spinal Cord, taken from a girl aged 14 years. (T. Godart.)

The disease commenced about a week previous to her admission to the Hospital, without any apparent cause. She died on the sixth day after her admission from progressive complete paralysis, which had extended to the arms.

384. Softening of the Spinal Cord with extravasation of blood, the result of a fracture of the seventh cervical vertebra. (T. Godart.)

385. A similar Specimen. (T. Godart.)

386. A Spinal Cord crushed by a fracture and dislocation of the spine. (W. J. Bayntin.)

DISEASES AND INJURIES OF THE NERVES.

387. Face of a man with right facial paralysis. (T. Godart.)

388. A Fibrous Tumour in the posterior Tibial Nerve, containing a soft grumous material. (T. Godart.)

The Specimen is preserved in Series XXXII, No. 2555.

DISEASES AND INJURIES OF THE EYE.

389. A small Tumour, growing apparently beneath the conjunctiva, and bearing three hairs, like eye-lashes, on its surface. (A. M. McWhinnie.)

390. The Eye of an Ox, with a growth of coarse warty Skin extending over part of the cornea, and bearing tufts of hair. (W. J. Bayntin.)

391. Pupil of an Eye occluded by lymph.

392. A Melanotic Sarcoma of the Globe projecting between and protruding the eyelids. (T. Godart.)

393. Sections of the Globe, from the same specimen, after removal. (T. Godart.)

394. Melanosis of the Eye-ball and Orbit.

The Specimen is preserved in Series XXXIII, No. 2638.

395. Face of a man, with a large malignant growth, ulcerated on the surface, and protruding from both orbits. (T. Godart.)

DISEASES AND INJURIES OF THE SKIN AND ITS APPENDAGES.

396. An Ichthyotic Condition of the Skin in a lunatic, 46 years old, in whom the disease had existed since childhood.

Portions of the skin are preserved in Series XXXV, Nos. 2710, 2711.

397. Elephantiasis of the Arm of a woman, which weighed, after removal, forty pounds. (T. Godart.)

398. Scrotum of a Bengalee affected with Elephantiasis and weighing forty pounds, which was removed by operation.

399. Elephantiasis of the Scrotum.

400. Elephantiasis of the Leg. (T. Godart.)

401. True Keloid. (T. Godart.)

From a gentleman aged 65 years. The tumour had been growing thirty-six years, and ensued from the irritation caused by carrying a carpet bag slung across the shoulders.
A cast of the Specimen is preserved, No. 153.

402. Keloid Growths from a Cicatrix following a burn.

403, 404. Extensive Keloid Growths in the Cicatrices following scalds of a Leg and Foot. After amputation of the leg, the patient completely recovered.

The leg was amputated below the knee in 1848; the patient was seen in 1875, and there had then been no return of the growth anywhere.—See *Henry Ward Book*, vol. iv.
The Specimen is preserved in Series XXXV, No. 2696.

405. Circumscribed Scleroderma (Syn. Keloid of Addison, Morphæa). (T. Godart.)

The disease occurred in the form of smooth, raised, hard patches on both sides of the abdomen. The drawing was taken seven years after the commencement of the disease.

405a. A drawing from the same patient three years later. Pigmentary stainings mark the site of the original affection. (T. Godart.)

406. Circumscribed Scleroderma (Syn. Keloid of Addison) of the leg of a middle-aged woman. (T. Godart.)

407. Discoloration of the Integuments, associated with disease of the supra-renal capsules. (T. Godart.)

407a. A large hairy Mole upon the forehead of a young girl. (T. Godart.)

408. The Face of a woman, showing a dusky discoloration of the skin, produced by the administration of nitrate of silver for epilepsy. (T. Godart.)

409. The Face of a married woman, aged 34 years, affected with Myxœdema. The listless expression, puffy eyelids, and waxy complexion, associated with this affection, are well marked. (T. Godart.)

410. A Girl's Hand, enlarged by a kind of solid œdema following a burn.

411. Erythema Circumscriptum of an Arm. (T. Godart.)

Taken from a child aged 3 years.

412. Erythema Circinatum. (T. Godart.)

413, 414. Erythema Serpens. (T. Godart.)

415. Erythema Multiforme (?) (T. Godart.)

416, 417. Erythema Vesiculatum of the Hands and Feet, supposed to be due to exposure to cold. (T. Godart.)

418. The Face and Left Hand of a woman affected with Erythema Tuberculatum. (T. Godart.)

419. Lichen Ruber. (T. Godart.)

A cast is preserved, No. 157.

420. Psoriasis of an Arm, of many months' duration, in an old man.

421. Psoriasis, with a heaping up of epithelial scales in such a manner as to resemble Rupia (T. Godart.)

421a. Eczema of the Cheek and Scalp of a child. (T. Godart.)

422. Urticaria Hæmorrhagica? (T. Godart.)

423. Herpes Zoster of the right side of the face, lower lip, and of the upper eyelid; on the lower lip it passes across the mesial line, and there is also a patch on the left side of the tip of the nose. (T. Godart.)

424. Drawing of Herpes Zoster of the neck and shoulder, in part sloughing. (T. Godart.)

Taken from an old man much broken down in health.

425 to **429.** Illustrations of Pemphigus. (T. Godart.)

430. A Bullous Eruption confined to the hands, the nature and cause of which was uncertain. (T. Godart.)

431. A long-standing Eruption of uncertain nature (? Pemphigus pruriginosus). (T. Godart.)

432, 433. Xanthelasma plana et tuberosa of the Face, Nose, Ear, Arm, and Hand. (T. Godart.)

A cast of the hand is preserved, No. 163.

434. Xanthelasma plana on the palm of the Hand. (T. Godart.)

435. A primary Syphilitic Sore on the Cheek. (T. Godart.)

436. A Rupial Syphilitic Eruption on the Face. (T. Godart.)

437. Syphilitic Rupia, with Crusts, on an Arm.

438. Syphilitic affection of the Integument. (T. Godart.)

439, 440, 441. Similar illustrations of syphilides. (T. Godart.)

442. Tertiary syphilitic affection of the Nipple. (T. Godart.)

443. A Warty Ulcerating Growth in the fold of the Groin. (T. Godart.)
From a case of syphilis.

444. Sketch showing the different stages in the progress of a syphilitic gumma of the integuments. (T. Godart.)

445. An Eruption on the face caused by the administration of Iodide of Potassium. (T. Godart.)

446. An Eruption occurring in a man suffering from chronic Bright's disease of the kidneys, who was taking iodide of potassium. The eruption looked vesicular (like herpes), but the seeming vesicles were solid (tubercular). (T. Godart.)

446a. A Cutaneous Eruption produced in an infant, 8 months old, from the administration of Bromide of Potassium. (T. Godart.)

447. An Eruption (? Vaccinia) appearing nine or ten days after vaccination in a child 1 year and 8 months old. (T. Godart.)

448. A Cutaneous Eruption (? Vaccinia), occurring after vaccination. No history of syphilis. (T. Godart.)

449, 450. An Eruption on the face of a young woman, who worked in skins (making seal-skin purses). (T. Godart.)

451. Purulent and Bloody Discharge from the Nostrils, and pustules with inflamed bases on the face; probably glanders.

452. A Pustular Eruption on the hand, occurring in a young man, suffering from glanders, of which he died. (T. Godart.)

453. Purpura Hæmorrhagica.

454. Purpura Hæmorrhagica; there are minute and diffused ecchymoses on the leg.

455. Purpura Hæmorrhagica, with very minute effusions of blood.

456, 457. Purpura Hæmorrhagica. (T. Godart.)

458. Discoloration of the Integuments associated with purpura. (T. Godart.)

459. Scurvy; from a patient on board the "Dreadnought" Hospital-ship.

460. Chronic Ulcers of the Integuments of a Leg, granulating and healing.

461. Ulcer of the Back, of ten years' duration, which resisted all remedies. After complete excision, healing was nearly completed, when similar ulceration again commenced, and rapidly extended.
The Specimen is preserved in Series XXXV, No. 2720.

462. A circular Ulcer of the left lower extremity. (T. Godart.)

463. A peculiar form of Sloughing and Ulceration of the Integuments of a Leg; in a strumous patient. (H. B. Dobell.)

464. Lupus non-exedens. (T. Godart.)

465. Lupus exedens. (T. Godart.)

466. Scrofuloderma (verrucosum ?) of the Leg and Foot. (T. Godart.)
Taken from a boy aged 10 years.

467, 468. A ruddy, finely warty or papillary condition of the Skin, with much thickening, but no ulceration (papillary lupus?). It affected the surface and fold of both buttocks, and the inner surface of the right thigh at the perineum. (T. Godart.)

From a middle-aged man.

469. Cancerous Nodules in the Skin, in connection with cancer of the thyroid gland, liver, and lymphatic glands. (T. Godart.)

470. Rodent Ulcer (epithelioma) of the Cheek. (T. Godart.)

471. Molluscum Simplex, with a great cutaneous growth of the nates, and a cancerous growth in the axilla. (T. Godart.)

472. An Ulcerating Mass in front of the Ear springing from a Molluscum contagiosum. (T. Godart.)

473. Tinea Ungium (ringworm of the nails). (T. Godart.)

From a child, having at the same time ringworm of the scalp.

474. Tinea Favosa Capitis. (T. Godart.)

Drawn from a youth aged 18 years. He had one nail affected.

475. Tinea Favosa. (T. Godart.)

From a boy aged 18 years.

476. A similar Specimen. (T. Godart.)

477. Itch-Parasites (Acarus Scabici; Sarcoptes hominis).

DISEASES OF THE TESTICLE, ITS COVERINGS, AND OF THE SPERMATIC CORD.

478. Tubercular Disease of a Testicle; and a portion of the Cerebellum containing caseous tubercular masses from the same case. (T. Godart.)

479. A Testicle, laid open, occupied by softened tubercle. (T. Godart.)

480. Chronic Enlargement of a Testicle, with a deposit of yellow soft substance. (H. B. Dobell.)

481. A Round-cell Sarcoma of a Testicle containing a mass of Cartilage.

482, 483, 484. Medullary Tumours of the Testicle. (T. Godart.)

DISEASES OF THE SCROTUM.

485. Chimney-Sweeper's Cancer of a Scrotum: a small, discoid, elevated, vascular, and warty growth.

486. Similar disease: a larger Wart, covered with a thick, dry, black scab. (H. B. Dobell.)

487. Similar disease: in part warty, in part scabbed, in part deeply and irregularly ulcerated.

488. Large Cancerous Ulcer of a Scrotum, not connected with Soot. (H. B. Dobell.)

DISEASES AND INJURIES OF THE URETHRA AND PENIS.

489. Stricture of an Urethra; and dilatation of the prostatic ducts, some of which contained calculi. (A. M. McWhinnie.)

490. Urethra, with two annular Strictures of thirty years' duration.

491. Urethra, with a Stricture an inch in length in the bulbous and membranous parts.

492. Dilatation of the middle of the prostatic portion of a Urethra.

493. Urethra, with Stricture and urinary Fistulæ.

494. Stricture of the Urethra with numerous false-passages.

495. White superficially sloughing Sore on the Glans Penis of an old Man.

496. A Syphilitic Bubo, with pale coarsely granulating base and margins.

497. Bubocs.

498, 499. Secondary Syphilitic Ulcer (Creeping Bubo) in the hollow of a Thigh: in 498, progressive; in 499, partially healed. (H. B. Dobell.)

500. Exuberant warty Epithelioma of the mucous and submucous tissues of the Prepuce. (T. Godart.)

501. Cancer of the Corpus Spongiosum Urethræ.

DISEASES OF THE UTERUS.

502. Vaginal portion of a Uterus, enlarged and indurated, and with irregular fissures of the Os.

The Specimen, excised from the Uterus, is in Series XLIII, No. 2960.

503. A similar Specimen, with ulceration of the Cervix Uteri. (T. Godart.)

504. Hypertrophy of the Cervix Uteri, with ulceration. (T. Godart.)

505. Ulceration of the Os and Cervix Uteri. (T. Godart.)

506. A Polypus, having a long pedicle protruding from the os uteri. (T. Godart.)

507. A Polypus growing from the upper part of the cavity of a Uterus, and with a ligature tied around its neck. The patient died eight days after the application of the ligature.

508. Section of same Polypus.

The Specimen is in Series XLIII, No. 2972.

509. An extremely vascular Fibro-cellular Tumour removed from the Vagina. During life it was attached by a narrow base to the posterior lip of the os uteri. (T. Godart.)

510. A large Uterine Fibroid. (T. Godart.)

511. A large lobulated Fibroid of the Uterus. (T. Godart.)

512. Section of a large Fibroid of the Uterus. (T. Godart.)

513. A Uterine Fibroid, with a small, well-defined, capsulated fatty tumour imbedded in it. (T. Godart.)

The Specimen is preserved in Series XLIII, No. 3001.

514. A large sloughing Fibroid attached to a portion of the lips of the Uterus, and projecting into the vagina. The walls of the uterus are healthy, but a large colloid growth is seen between the uterus and rectum, and a small polypoid mass of uncertain nature projects into the uterine cavity. (T. Godart.)

515. Extreme vascularity of the inner surface of the Uterus. From a woman poisoned with arsenic.

516. A Uterus and its Appendages from a case of peritonitis after Enteric Fever. (T. Godart.)

DISEASES OF THE VAGINA AND EXTERNAL ORGANS OF GENERATION IN THE FEMALE.

517. An enormous warty growth from the clitoris. (T. Godart.)

DISEASES AND INJURIES INCIDENTAL TO GESTATION AND PARTURITION.

518. Uterus laid open, showing a villous membrane in its interior, and a cyst in the Fallopian tube, which contained an ovum. (T. Godart.)

519. Tubal Gestation, in the seventh week.

From the Specimen in Series XLVI, No. 3071.

DISEASES OF THE MAMMARY GLAND.

520. A Sero-cystic Tumour removed from the Mamma of a woman, where it had been growing 21 years. (T. Godart.)

521. Sero-cystic Tumour (Proliferous Cysts) in a Mammary Gland, together with dilatation of the ducts.

522. A Proliferous Cystic Tumour in a Mammary Gland: the intracystic growths protruding. After a third return of the disease, the patient died with erysipelas.

The Specimen is in Series XLVIII, No. 3155.
The recurrent growth is preserved in No. 3156.

523. Tumour in a Mammary Gland, consisting partly of cysts and partly of a solid substance of doubtful nature. Similar growths existed in the axilla, and, by their exceeding increase and protrusion, proved fatal.

524. Immense Mammary Glandular Tumour. A section of it is in Series XLVIII, No. 3160; the chief mass is in the Pathological Museum of the Royal College of Surgeons.

525. A Spindle-cell Sarcoma of a Breast.

The Specimen is in Series XLVIII, No. 3163.

526, 527. Scirrhous Cancers of the Mammary Gland. (T. Godart.)

528. Scirrhous Cancer of a Breast, with unusual fulness of its blood-vessels.

529. Scirrhous Cancer of a man's Breast. (T. Godart.)

530. Scirrhous Cancer of the Mammary Gland, with extensive softening (fatty degeneration and liquefaction) of its central parts. (T. Godart.)

531. Superficial ulceration surrounding a Nipple (eczema of nipple) and covering a hard Cancer of the Breast.

532. Colloid Cancer of the Mamma. (T. Godart.)

533. A primary Syphilitic sore on the Nipple. (T. Godart.)

Contracted by suckling an infant with syphilis.

GENERAL PATHOLOGY.

534. The head of a Maltese Cock, into the comb of which a spur had been transplanted from the foot by John Hunter, and had grown into the spiral horn six inches long, shown in the drawing. (T. Godart.)

From a preparation in the Museum of the Royal College of Surgeons.

535. Contraction of the elbow and wrist after a burn. (T. Godart.)

536, 537, 538, 538a, 538b. Illustrations of Dry Gangrene. (T. Godart.)

539. The Foot of a Negro, whose toes became gangrenous from frost-bite. The broad red band represents the granulations springing up between the living and dead parts. (T. Godart.)

The toes are preserved in Series L, No. 3238.

540. Dry Gangrene of both feet from frost-bite. (T. Godart.)

541. Traumatic Gangrene of the Hand and lower part of the Fore-arm of a boy. (T. Godart.)

542. A large Slough of the Scalp of an infant. Cause uncertain. (T. Godart.)

543. Gangrene of the Skin of the Loins and of both Thighs of a child aged $2\frac{1}{2}$ years. (T. Godart.)

544. Sloughing Phagedæna of the Arm. (T. Godart.)

545 to **545f.** A Series of Sketches of the effects of Hospital Gangrene, from cases which occurred in St. Bartholomew's Hospital in 1846. An account of the cases is recorded by Mr. Holmes Coote in the *Lancet*, October and November, 1847.

546. Softened Cartilaginous Tumour of the metacarpal bone of an index-finger. In general appearance it resembled gelatiniform cancer.

547. A large Adenoma of the Parotid Gland, containing portions of cartilage. (T. Godart.)

The Specimen is preserved in Series XIV, No. 1831.

548. Large Tumour from over a Parotid Gland. It consisted probably in part of cartilage: its centre is hollowed out, and contained fluid. (J. L. Bailey.)

The Specimen is in the Museum of the University of Cambridge.

549. A softened Fibro-cellular Tumour of the Fore-arm.

550. Fibro-Cellular Tumour removed from beneath a tensor vaginæ femoris muscle. One end of it is covered with a thin layer of bone; and partitions, containing nodules of cartilage, traverse it.

From a Specimen preserved in Series L, No. 3285.

551. A pendulous Fibro-cellular Tumour.

552. A pedunculated Fibro-cellular Tumour of the Back. (T. Godart.)

553. A Fibro-cellular Tumour of the Buttock.

554. A Tumour composed of fibro-cellular and adipose tissue, growing from the Perineum. (T. Godart.)

On removal it was found to have extended deeply into the right ischio-rectal fossa.

555, 556. Drawings of a soft Round-cell Sarcomatous Tumour, springing from the angle of the mouth and inside of the cheek. (T. Godart.)

Taken from a young child. The growth recurred soon after its removal.—See *President Ward Book*, vol. vi, p. 439.

557 to **561.** Spindle-cell Sarcomata (recurrent fibroid Tumours).

No. 561 is preserved in Series L, No. 3299.

562, 563. Great protruding "recurring fibroid" Tumour of a Leg. In general aspect both its exterior and its section resemble a brain-like medullary tumour. The case is described by Sir J. Paget in his Lectures on Tumours, p. 598.

The Specimen is preserved and is described in Series L, No. 3302.

564. Enormous Tumour in a girl's Neck having a fibrous appearance, rapidly reproduced after partial removal.

565. Great Omentum occupied by a Fibro-sarcomatous Growth, which involved also the uterus and ovaries. (T. Godart.)

566. A recurrent ossifying Tumour from the subcutaneous tissue of a Thigh. (T. Godart.)

567. A Myeloid (fibro-plastic) Tumour in an Upper Jaw.

568. Myeloid Sarcoma of the Inferior Maxilla. (T. Godart.)

569. A Lympho-sarcomatous Tumour occupying the mediastinum, and compressing the superior vena cava. (T. Godart.)

570. Large Tumour occupying the anterior mediastinum, and making its way externally through the wall of the chest. (T. Godart.)

571. A soft New-growth occupying the muscles of the Calf of an infant, in whom the disease had existed twelve months. (T. Godart.)

572. A Melanotic Tumour beneath a cutaneous nævus on the Abdomen. The Specimen is described with the preceding.

The Specimen is preserved in Series L, No. 3318.

573. Melanosis, in clustered and more distantly scattered minute tumours in the heel and leg.

574. Epithelioma of the back of the Hand. Parts of the ulcerated surface appear to be healing. The disease was of slow progress in an old man.

575. Large, warty, and very vascular Epithelioma of the whole of the lower lip, and half the upper lip, of an old man.

576. Extensive ulcerated Epithelioma of the Lips of an elderly woman. The growth surrounds more than half the mouth. The drawing was made after death.

577. Extensive ulcerated and deeply infiltrated Epithelioma of the lower lip, gum, and chin.

578. Deep-seated Epithelioma of the cheek.

579. Epithelioma of the Tongue, Fauces, and upper part of the Larynx, with secondary deposits in the Cervical Lymphatic Glands. (T. Godart.)

580. Cancerous growths in the Axilla of a Woman, whose whole body was beset with growths of molluscum simplex. (T. Godart.)

From a Specimen in Series L, No. 3331.

581. Medullary Tumour from a Thigh: partly brain-like, partly intensely vascular, and presenting in many places effusions of blood. (T. Godart.)

582. Medullary Tumour, from among the muscles in the lumbar region. (J. Paget.)

583. Medullary Tumour, with a portion of the pectoral muscle that covered it.

From a Specimen preserved in Series L, No. 3334.

584. Great Medullary Tumour between the Prostate Gland and Rectum of a man 70 years old. It was of slow growth, and simulated the characters of simple enlargement of the gland.

585. Malignant Growth of the orbit and side of the face, from a child aged 18 months. (T. Godart.)

586. Tumours of uncertain nature in an upper arm. The patient lived several years after amputation at the shoulder-joint.

Specimens are preserved in Series L, Nos. 3356, 3357.

587. A Tumour, of uncertain nature, but nearly resembling the preceding, in a boy's fore-arm.

The Specimen is preserved in Series L, No. 3302.

588. Colloid Cancer, involving a toe. (T. Godart.)

The Specimen is preserved in Series L, No. 3338.

589. Colloid Cancer, originating in an ovary. (T. Godart.)

590. The Head of a woman, aged 21 years, the Pinna of whose Ear was affected with Arterial Angioma (aneurism by anastomosis.) (T. Godart.)

The ear is preserved in Series L, No. 3345.

591. Small congenital Nævus. (T. Godart.)

592. Large congenital Nævus. (T. Godart.)

593. Degenerate Venous Vascular Tumour from the thigh. (T. Godart.)

The Specimen is preserved in Series L, No. 3348.

594. Vascular Tumour, sloughing on its surface. (T. Godart.)

595. A Cyst in the substance of the diaphragm. (T. Godart.)

The Specimen is preserved in Series L, No. 3580.

596. Cystic and Fibro-Cellular Tumour removed from beneath the gracilis and adductor longus muscles in a thigh.

597. Large Cyst, containing fluid blood, in a boy's neck.

598. A congenital Growth of the nature of a Cystic Hygroma, occupying the inner surface of the arm. (T. Godart.)

MISCELLANEOUS SPECIMENS.

599. The knot of a silk ligature which was applied to the pedicle of an ovarian tumour, and found imbedded in connective tissue on the patient's death one year after the operation. (T. Godart.)

The Specimen is preserved in Series XLI, No. 2931.

600. Large Calculus, composed principally of Urate of Ammonia, formed on a hair-pin in the urinary bladder of a child.

601. Similar Calculus, formed on a female silver catheter, which had remained in the bladder between two and three years.

Presented by Jonathan Toogood, Esq.

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