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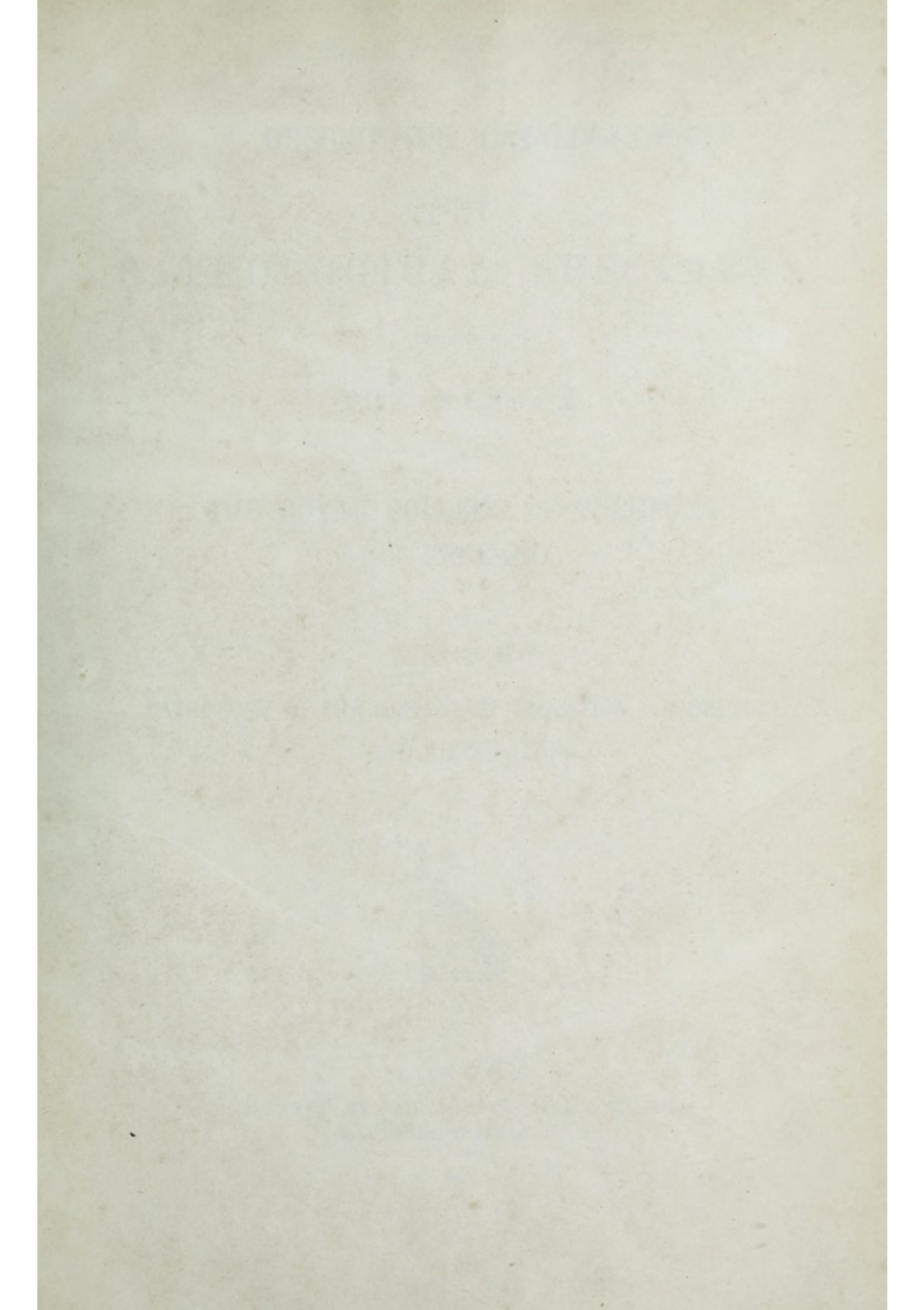
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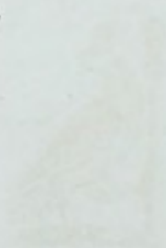
PATHOLOGICAL SPECIMENS

THE MUSEUM

THE ROYAL COLLEGE OF SURGEONS
OF ENGLAND

LONDON

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*For the Library
of the Royal College of Physicians of London
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DESCRIPTIVE CATALOGUE *Edw. Mayhew*

OF THE
PATHOLOGICAL SPECIMENS

CONTAINED IN
THE MUSEUM
OF
THE ROYAL COLLEGE OF SURGEONS
OF ENGLAND.

VOLUME III.

PATHOLOGY OF THE ORGANS OF DIGESTION, ABSORPTION,
AND CIRCULATION.



LONDON:
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DIVISION II.

SPECIAL PATHOLOGY,

CONTINUED.

SERIES XV.—INJURIES AND DISEASES OF THE TEETH.

THE arrangement of the following specimens is similar to that adopted by Mr. Hunter in the second part of his "Treatise on the Natural History and Diseases of the Human Teeth;" for the illustration of which the extracts appended to the descriptions of many of the preparations show that they are peculiarly appropriate.

1. *Fractures of Teeth.*

1001. A molar tooth, one of the fangs of which was broken in extracting it. The end of the pulp was torn out of that part of the fang which remained in the jaw, and is attached to the end of the portion extracted.

Hunterian.

2. *"The Decay of the Teeth, arising from Rottenness."*

"The most common disease to which the teeth are exposed is such a decay as would appear to deserve the name of mortification. But there is something more; for the simple death of the part would produce but little effect, as we find that teeth are not

subject to putrefaction after death, and therefore I am apt to suspect, that during life there is some operation going on which produces a change in the diseased part."—*Hunter: On the Teeth; Works*, vol. ii., p. 59.

1002. Section of a bicuspid tooth, of which half the crown is decayed. Part of the decayed substance has been removed; the rest is distinguished by its dull pale-brownish colour and the loss of its natural texture, which loss is more complete at the surface than in the deeper part of the decayed portion. The pulp-cavity is healthy; part of it is filled with red injection. The border of the enamel adjacent to the decayed part is opaque-white.

Hunterian.

1003. Section of a decayed molar tooth, in which the disease has destroyed one of the tubercles of the crown, and has extended into the pulp-cavity, and along its walls. On the opposite side there is a small opaque-white spot of diseased enamel.

Hunterian.

"It [decay] almost always begins externally in a small part of the body of the tooth, and commonly appears at first as an opaque white spot. This is owing to the enamel's losing its regular and crystallized texture, and being reduced to a state of powder, from the attraction of cohesion being destroyed, which produces similar effects to those of powdered crystal. When this has crumbled away the bony part of the tooth is exposed; and when the disease has attacked this part, it generally appears like a dark brown speck."—*Hunter: On the Teeth; Works*, vol. ii., p. 59.

1004. The fang of an incisor tooth, of which the whole crown has been destroyed by decay. The decay is exactly limited at the junction of the crown and fang.

Hunterian.

"The canal in the fang of the tooth is more slowly affected; the scooping process appears to stop there, for we seldom know a fang become very hollow to its point when in the form of a stump; and it sometimes appears sound, even when the body of the tooth is almost destroyed: hence I conclude that the fang of the tooth has greater living powers than the body, by which the process of the disease is retarded; and this part appears at last only to lose its living principle, and not to take on the mortifying process above described; for which reason it remains simply a dead fang."—*Hunter: On the Teeth; Works*, vol. ii., p. 60.

1005. A collection of variously decayed teeth, one from a hog, the rest from

men. They display most of the changes described by Mr. Hunter as characteristic of the disease;—its commencement in the exterior of the tooth—the “dark brown speck” of the decayed portion of ivory—the round form of the decayed part—the appearance of a black crack, indicating the beginning of decay “on the hollow part of the grinding surface of the molars,” &c. *Hunterian.*

1006. The fang of a decayed tooth, to the extremity of which a small fleshy growth is attached. *Hunterian.*

“Upon pulling out these teeth [which have been frequently inflamed] we may in general observe a pulpy substance at the root of the fang, so firmly adhering to the fang as to be pulled out with it. This is in some pretty large, so as to have made a considerable cavity at the bottom of the socket. This substance is the first beginning of the formation of a gum-boil, as it at times inflames and suppurates.”—*Hunter: On the Teeth; Works*, vol. ii., p. 69.

1007. A similar growth, attached to the fangs of an apparently healthy molar tooth. *From the Museum of Sir A. P. Cooper.*

1008. The fang of a decayed tooth, having a small “fungus” attached to its periosteum. *Hunterian.*

1009. Section of a molar tooth, of which the crown has been destroyed by decay, and the pulp-cavity is filled with a diseased growth called “a fungus” in the Hunterian catalogue. *Hunterian.*

3. “*The Swelling of the Fang.*”

“Another disease of the teeth is a swelling of the fang, which most probably arises from inflammation, while the body continues sound, and is of that kind which in any other bone would be called a spina ventosa. It gives considerable pain, and nothing can be seen externally. The pain may either be in the tooth itself or the alveolar process, as it is obliged to give way to the increase of the fang.”—*Hunter: On the Teeth; Works*, vol. ii., p. 71.

1010. "A [bicuspid] tooth, swelled in its body, which gave great pain, and made the antrum suspected."—*Hunterian MS. Catalogue.*
1011. A molar tooth, of which the fang is enlarged, especially at its extremity, and has a nodulated bulb-like form. *Hunterian.*
1012. A molar tooth, deeply decayed in the centre of its crown. All its fangs are enlarged by the formation of a thin layer of granular, dull-white, new bone upon them. It is chiefly accumulated about the deeper part of the fang. Extreme pain attended its formation.

Presented by John Quekett, Esq.

4. "Gum-Boils."

1013. "A gum-boil that had healed up, which is seen by a little rising point" above the second left incisor tooth. The necks of the incisor and canine teeth are decayed. *Hunterian.*

"Gum-boils are easily known. Those which open through the gum may be distinguished by a small rising between the arch of the gum and the attachment of the lip: upon pressing the gum at the side of this point, some matter will commonly be observed oozing out at the eminence. This eminence seldom subsides entirely; for even when there is no discharge, and the opening is healed over, a small rising may still be perceived, which shows that the gum-boil has been there."*—*Hunter: On the Teeth; Works*, vol. ii., p. 73.

5. "The Scurvy in the Gums (vulgarly so called)."

The gums sometimes "swell, become extremely tender, and bleed upon every occasion; which circumstances being somewhat similar to those observable in the true scurvy, the disease has generally been called a scurvy in the gums.

* After these Mr. Hunter treats of "Excrescences from the Gum." The specimens of the various diseases which may be thus termed are included in the next Series, "Tumours of the Jaws:" Mr. Hunter himself says they "do not wholly belong to our present subject."

"But as this seems to be the principal way in which the gums are affected, I suspect that the same symptoms may arise from various causes, as I have often seen the same appearances in children evidently of a scrofulous habit, and have also suspected the same cause in grown people: they likewise frequently appear in persons who are in all other respects perfectly healthy."—*Hunter on the Teeth; Works*, vol. ii., p. 82.

1014. Part of a lower jaw, with the margins of the gum spongy and detached from the teeth, and a gum-boil in front of the fang of the first left incisor tooth. *Hunterian.*

6. "*Extraneous matter upon the Teeth.*"

"There are parts of the tooth which lie out of the way of friction, viz., the angles made by two teeth, and the small indentation between the tooth and gum.

"Into these places the juices are pressed, and there stagnate, giving them at first the appearance of being stained or dirty."

"All our juices contain a considerable quantity of calcareous earth, which is dissolved in them, and which is separated from them upon exposure, which continues mixed with the mucus; so that the extraneous matter consists of earth and the common secreted mucus."

"The earth is attached to and crystallized upon the tooth, and the mucus is entangled in these crystals."—*Hunter: On the Teeth; Works*, vol. ii., p. 85, 86, 87.

1015. Two molar teeth, with thick deposits of tartar on one side of the base and on a small part of the surface of their crowns.

1016. Two teeth from a small dog, thickly incrustated with tartar.

Hunterian.

1017. A mass of earthy substance, which formed on the stump of a tooth in the upper jaw of a woman seventy years old. It looks like a mass of tartar, and is upwards of an inch in length, and nearly an inch in breadth.

Hunterian.

Mr. Hunter probably alludes to this specimen when he says,—“I once saw a case of this kind where the accumulation, which was on a grinder, appeared like a tumour on the inside of the mouth, and made a rising in the cheek, which was supposed, by every

one that felt it, to be a scirrhus tumour forming on the cheek ; but it broke off, and discovered what it was."—*Hunter : On the Teeth ; Works*, vol. ii., p. 86.

1018. A human canine tooth, of unusual form, and having its whole fang and part of its crown covered with a layer of tartar. *Hunterian.*

7. "*Irregularity [and Malformation] of the Teeth.*"

1019. "A grinder of the lower jaw, which had formed in the gum, for it was completely out of the jaw, and was loose, therefore drawn and proved to be a tooth not fully grown."—*Hunterian MS. Catalogue.*

1020. Two temporary incisor teeth, united by their adjacent edges : the union of the fangs is complete ; that of the crown is only partial.

Hunterian.

1021. An incisor tooth, which has a small spiculum of enamel projecting from the anterior surface of its crown. *Hunterian.*

1022. A human molar tooth, on which, attached to one side of its fang, and diverging at a right angle from it, there is a large growth apparently of ivory. The growth is of irregular form, not much unlike that of a large molar tooth ; it has a smooth polished surface, and measures eleven lines in length ; the part by which it is attached to the fang is five lines in diameter, and at the opposite end, which resembles the crown of a molar tooth, it is seven and a half lines in its greatest diameter. *Hunterian.*

8. "*Transplanted Teeth.*"

THE general account of Mr. Hunter's experiments and doctrines respecting the transplantation or grafting of parts is given in a former part of the Catalogue [Vol. I., p. 22] with the description of the teeth transplanted into the cock's combs and other similar specimens. Here are placed only the specimens of disease or absorption of transplanted or replaced teeth.

" This operation [of transplanting teeth], like all others, is not attended with certain success. It sometimes happens that the two parts do not unite, and in such cases the tooth often acts as an extraneous body,* and instead of fastening, the tooth becomes looser and looser, the gum swells, and a considerable inflammation is kept up, often terminating in a gum-boil. In some cases, where it is also not attended with success, there are not these symptoms: the parts appear pretty sound, only the teeth do not fasten, and sometimes drop out. It also happens that transplanted teeth have a very singular operation performed on them while in the socket; the living socket and gum finding this body kept in by force, so that they cannot push it out, set about another mode of getting rid of it, by eating away the fang till the whole is destroyed, exactly similar to the wasting of the fangs of the temporary teeth in the young subject.

" I have all along supposed, that where this practice is attended with success there is a living union between the tooth and the socket, and that they receive their future nourishment from this new master. My reasons for supposing it were founded on experiments on other parts, in animals, and also observations made on the practice itself; for, first, I observed that they kept their colour, which is very different from that of a dead tooth; for a living tooth has a degree of transparency, while a dead one is of an opaque chalky white.

" Secondly, there are instances of their becoming diseased, in the same manner as an original living tooth; at least the following case favours strongly this opinion:—

" In October, 1772, a gentleman of the city of London had a tooth transplanted, which was perfectly sound, and fixed in its new socket extremely well; about a year and a half after two spots were observed on the fore part of the body of the tooth, which threatened a decay; they were exactly similar to specks, or the first appearance of decay, which come upon natural living teeth. Pain is also sometimes felt in the transplanted tooth.

" But what puts it beyond a doubt is, that a living tooth, when transplanted into some living part of an animal, will retain its life; and the vessels of the animal shall communicate with the tooth, as is shown by experiments." [See vol. i. p. 24.]—*Hunter: On the Teeth; Works*, vol. ii., p. 103, 104.

1023. Two incisor teeth, which were transplanted, but fell out. Numerous small round pits and channels like worm-eaten holes, have been made in their fangs. *Hunterian.*

1024. A bicuspid tooth, which, after it had been drawn, and a decayed cavity in its crown had been stopped, was replaced in its socket. Its fang was nearly all absorbed, and it fell out. *Hunterian.*

* " I say often, because I do not suppose that it always acts as an extraneous body; because we know that dead teeth have stood for years without affecting the sockets or gums in the least. We may therefore suppose that it is sometimes the case with transplanted living teeth."

1025. A bicuspid tooth, which was transplanted into a young lady's jaw, and remained fixed for four years. Half its crown is destroyed by decay, apparently of the ordinary kind; its fang is very thin, and near its extremity there is a hole through it, as if it had been drilled.

Hunterian.

1026. Section of an incisor tooth, which fell out after transplantation. Parts of its fang have been absorbed, as in the preceding specimens. There is a large hole through its crown, formed apparently by ordinary decay.

Hunterian.

Specimens of Injuries and Diseases of the Teeth in other parts of the Museum :—

Repair of Injuries, 3424 to 3435.

Decay, 3436-7-8.

Tartar-deposits, 3439.

Malformations, 3440 to 3443.

Transplantation, 47 to 50.

Growths in the pulp or pulp-cavity, 3444 to 3448.

SERIES XVI.—TUMOURS OF THE JAWS.

THE peculiar interest and importance of Tumours of the Jaws, as objects of practical surgery, seem to justify the plan of placing them together, for the purpose of showing what are the various kinds of growths for which operations on these parts may be required. The present series is made with this view. In its arrangement, the tumours are placed nearly according to the plan of the Sixth Series; some regard being also paid to the particular part or tissue in which, in each case, the morbid growth originated.

1. *Epulis—Fibrous Tumours of the Gums.*

1027. "A tumour formed at the root of a diseased tooth."—(*Hunterian MS. Catalogue.*) It is an irregular mass of minutely lobulated, warty sub-

stance, pale, and in texture resembles the gums. It measures two and a half inches in length.

1028. "An excrescent tumour, taken off the gum and jaw of Mr. Price, which was cured."—(*Hunterian MS. Catalogue.*) The tumour displays the general characters of Epulis. It is of elongated oval form, and nearly two inches in length; its tissue is compact, pale, obscurely fibrous, and glistening, like that of healthy gum; its exposed surface is knobbed, and covered with mucous membrane. It appears to have originated in the tissue of the gum of the lower jaw.

1029. Sections of a tumour, composed of bone and a substance like fibro-cartilage, of irregular shape, about an inch in its chief diameter, and covered with mucous membrane. It was removed from the alveolus of the upper jaw of a lady. A bristle is passed into the cancellous osseous substance of the base by which the tumour was attached. *Hunterian.*

1030. "A small circumscribed tumour from the inside of the mouth."—(*Hunterian MS. Catalogue.*) It is like that last described.

1031. "A tumour, extracted from the inside of a lady's mouth."—(*Hunterian MS. Catalogue.*) It is almost exactly like that last described.

1032. A left superior maxillary bone, and part of that of the opposite side, which, with a large tumour formed on them, were removed by operation. In the front of the preparation that part of the tumour is shown which projected from the mouth. It is a nodulated mass, of an elongated, oval, and somewhat arched form, measuring six inches from side to side, and four inches from above and downwards. Before removal it extended up to the angle of the left eye, and completely closed the nostrils. At the back of the preparation the cut surfaces of the bones, and those parts of the tumour which were affixed to them, and projected within the mouth, are shown. The positions of its several parts may be traced by their

relation to the last two molar teeth on the left side, which remain in their places, and by a deep groove continued from them along the under surface of the tumour, which marks the course of the alveolar arch, and partially divides the tumour into two portions. Of these portions the anterior, which projected from the mouth, is by far the larger; the posterior measures nearly four inches from side to side, and nearly three inches from before backwards. It has the same external appearance as the anterior portion already described; and before removal it filled the cavity of the mouth, and projected backwards beyond the soft palate. The cut surfaces of bones shown in this part of the preparation are those of the left zygoma, the outer angle of the left malar bone, the orbital plate, nasal process, and posterior wall of the left superior maxillary bone, the vomer, and the palatine portion of the right superior maxillary bone. The outer wall of the antrum is also shown. All the intervening parts are involved in the tumour, which, also, projects beyond the bones in every direction. The tumour is composed of firm, uniform, pale, inelastic, and slightly vascular substance. It appears to have had its origin in the gum of the anterior part of the left upper jaw-bone, and thence to have extended in nearly every direction. The cavity of the antrum is diminished by the external pressure of the tumour, but its lining membrane is sound, and the bones, so far as they can be examined, are healthy.

The patient, M. Griffiths, was a girl twenty years old. The tumour had first appeared, without any evident cause, eight years before she came under the care of Mr. Liston, as a small hard mass projecting from the gum of the second upper incisor tooth of the left side. It increased slowly, and for the most part without pain. Part of it was removed three years and a half from the time of its commencement, and it had been subjected to various treatment. During the last year its surface had always bled for a few days previous to each menstrual period. The patient recovered rapidly after the operation; and was seen, without any sign of returning disease, nine years afterwards.

The case is reported in the "Lancet," Nov. 5, 1836, and in the "Medico-Chirurgical Transactions," vol. xx. London, 1837, p. 198. There are sketches of the appearance of the patient before and after the operations in those works, and in Mr. Liston's "Practical Surgery," p. 301, Ed. 1846.

From the Museum of Robert Liston, Esq.

2. *Cystic Tumours of the Jaws.*

1033. The left side of a lower jaw, from the condyle to the canine tooth, removed by operation. The walls of the jaw are expanded into a large oval multilocular sac, of which some of the cells are filled with glairy fluid, others with firm fleshy substance. The outer wall of the sac is so thin that it is in some parts membranous and transparent, and its continuity with the posterior margin of the jaw is in several places interrupted.

The patient was a middle-aged man, and the disease had existed for several years. The cyst, which was at first formed in the situation of the last two molar teeth, had been regarded as a simple cavity in the bone containing fluid, and setons had been passed through it with seeming benefit, but the swelling returned and increased rapidly. The operation was permanently successful.

From the Museum of Robert Liston, Esq.

3. *Cartilaginous and Osseous Tumours.*

1034. A lower jaw, enveloped in a large, firm, cartilaginous tumour. The tumour retains somewhat of the form of the jaw, and measures six inches in depth, and about two feet in circumference. Some of the molar teeth of the left side are imbedded in a row on its upper surface. The right ascending portion and angle of the jaw have been cut out from one end of the tumour, and are little altered; the rest of the bone is entirely enclosed within the tumour.

The patient, when she was thirty-two years old, had a small hard tumour on the right side of the lower jaw, just below the situation of the first molar tooth, which had decayed, and been removed a year before. This tumour gradually enlarged, without pain; and did not produce any suffering till during the last two years of the patient's life, when parts of it ulcerated, large quantities of fœtid saliva flowed from the mouth, and it was very difficult for her to carry her food over her tongue to the fauces. The

difficulty of swallowing thus produced prevented her from taking sufficient food, and she gradually sank, and died about eight years after the first appearance of the tumour.

A section of the tumour is preserved in No. 201, and described in vol. I. p. 88.

From the Museum of Joshua Brookes, Esq.

The history communicated by James Gillman, Esq.

1035. Part of the right side of a lower jaw, with sections of a large bony tumour at its angle. The angle of the jaw rests in a deep groove on the middle of the upper surface of the tumour, and in some situations their respective substances are continuous. The tumour projects both below and on each side of the jaw, is of irregular shape, measures nearly three inches in its chief diameter, and is deeply nodulated. It is composed throughout of bone, uniform in texture, and as hard and heavy as ivory.

Presented by J. F. South, Esq.

1036. The lower jaw of a Virginian opossum (*Didelphis*), on which there is at the anterior part of the left half an oval tumour composed of sponge-like osseous tissue. The tumour has chiefly grown externally, and the outer wall of the jaw is completely involved in it.

Hunterian.

1037. The skull of a cat. The left side of the lower jaw, from the angle to the symphysis, is surrounded by a growth of bone, arranged, for the most part, in thick porous laminae, and closely resembling that in the last specimen. The tissue of the jaw is everywhere continuous with that of the tumour. All the molar teeth remain in their places, but the canine and incisors are removed, and the sockets of the latter are nearly closed.

From the Museum of Joshua Brookes, Esq.

1038. The left half of the lower jaw of a kangaroo, within which a large oval tumour has formed, and has expanded the walls from the angle to the symphysis. The interior of the tumour is nearly filled with hard porous bone.

Presented by — Escott, Esq.

1039. One of the superior maxillary bones of a cod-fish (*Gadus Morrhua*) with a disk-shaped heavy osseous tumour, about two inches in diameter, and

half an inch in thickness, which has grown from its inner surface. It has the same external appearance, and probably the same compact ivory-like internal structure, as the tumour of the vertebræ of the cod described in vol. ii. page 172, No. 796.

From the Leverian Museum.

4. *Fibrous Tumours.*

1040. Part of the right side of a lower jaw, from the angle to the canine tooth, which, with a tumour formed upon it, was removed by operation. The tumour implicates nearly all the portion of the jaw which has been removed, and projects on both sides of it, but especially on its anterior and outer aspect. It consists of a firm, pale, and nearly homogeneous substance, with an obscurely fibrous texture, and seems to have originated in the interior of the jaw, the anterior wall of which is entirely destroyed, while the posterior is extended over the tumour. It has grown up around the molar and bicuspid teeth, and at this part its surface projecting into the mouth was soft and fungous.

The patient was a man twenty-six years old. The disease had been observed for three years. Before the removal of the portion of the jaw, the part of the tumour which projected in the mouth had been cut off and cauterized, but without benefit. The patient recovered after the operation.

From the Museum of Robert Liston, Esq.

1041. Part of the right side of a lower jaw, from the angle to the first bicuspid tooth, which, with a tumour formed upon it, was removed by operation. A vertical section from behind forwards has been made through the whole mass. The tumour, which measures about two inches in its greatest diameter, is situated almost entirely on the anterior surface of the jaw, projecting forwards and upwards, and extending along nearly the whole length of the portion removed. The greater part of the tumour consists of a pale, firm, and compact substance; at its base it is osseous,

and so closely attached to the anterior surface of the jaw, from which it appears to have risen, that the outline of the latter can scarcely be discovered. In its growth it has displaced the last two molar teeth; but the first molar and the second bicuspid remain.

From the Museum of Robert Liston, Esq.

1042. The right ascending portion, with the condyle and coronoid process, of the same lower jaw as that from which the preceding specimen was taken. A tumour of the same characters as that just described has been formed on the outer side of the ascending portion of the bone. The outer wall of this part is involved in the tumour; the inner wall, and the coronoid process and condyle, are sound.

The patient was a delicate woman thirty years old, who had been subject to tooth-ache from her infancy. Nine years before the appearance of any tumour she received a severe blow on the right cheek. The tumour, No. 1041, was removed five months after it was first observed, its growth having been accompanied with lancinating pain in the jaw and cheek, and continual headache. No portion of the tumour appears to have been left, but the disease re-appeared in the ramus of the jaw, and the parts preserved in No. 1042 were removed ten months after the first operation.

From the Museum of Robert Liston, Esq.

1043. "Part of a tumour taken out of the substance of the lower jaw of Miss Maitland."—*Hunterian MS. Catalogue.*

1044. Another portion of the same tumour. It has a firm, compact, homogeneous, pale texture; one half is covered with a thin layer of cancellous bony tissue, and the other half with mucous membrane. It appears to have been developed within the lower jaw. *Hunterian.*

1045. A section of a tumour, probably of the same kind as that last described, "from the inside of the mouth of a young woman:" half of it is invested with a thin shell of bone, which has been partly separated from its surface. *Hunterian.*

1046. A left superior maxillary bone, with a large tumour, removed by opera-

tion. The positions of the parts may be recognised by their relations to the left second incisor and canine teeth in front of the mass, and to the section of the left zygoma, with a portion of the tendon of the masseter muscle: all the other teeth on the left side have been removed. The tumour is irregular in its form, deeply lobed, but smoothly rounded on all its surfaces. Towards the palate it presents a circular slightly concave surface about four inches in diameter, the borders of which project from every part of the cavity of the mouth. It is composed of a white or pale yellow, firm, homogeneous substance; its cut surface has a glistening, transparent aspect; it is traversed in some parts by short, undulating, opaque-white fibres, and minute portions of bone are scattered through it, but are not arranged in any definite texture. The cut surfaces of the bones, and all the adjacent tissues, are healthy.

The patient, Ann Struther, was twenty-one years old. The tumour first appeared four years before its final removal, with pain in the left side of the face and head, which was ascribed to cold. It grew first on the outer side of the gum, and in six months after its first appearance, when it had attained the size of the end of a thumb, it was removed with the knife. It reappeared, and after eighteen months more, when it had gained the size of a hen's egg, it was removed with a portion of the alveolar process. Two or three weeks afterwards, however, it appeared again, and in the next two years attained its present size. In the final operation the whole superior maxillary bone was removed, together with the malar and inferior spongy bones, and the greater part of the zygoma. The patient recovered rapidly, and was in good health two years after the operation.

The details of the case are given in Mr. Liston's "Observations on some Tumours of the Mouth and Jaws," in the "Medico-Chirurgical Transactions," vol. xx. p. 189, London, 1837; and in the "Lancet," March 5, 1836. Sketches of the appearance of the patient before and after the operation are given there, and in Mr. Liston's "Practical Surgery," p. 311, Ed. 1846, in which there is also a sketch of the tumour at page 308.

From the Museum of Robert Liston, Esq.

1047. Sections of an oval tumour, with a broad base, removed from the interior of the mouth. Its surface is covered with healthy mucous membrane, and it is composed of a soft, greyish, semitransparent tissue, with small plates and fibres of bone thickly but irregularly scattered through it.

Hunterian.

1048. The greater part of a right superior maxillary bone, with a tumour, removed by operation. The tumour, which is affixed to the alveolar border, near the molar teeth, extends inwards, so as to cover the palatine portion of the jaw, and outwards, so as to conceal all the bicuspid and molar teeth, with the exception of the last. The walls of the antrum are pressed inwards, but its interior is healthy. The cavity of the nose is not implicated. The tumour has a lobulated but smooth surface, and is composed of a firm, pale substance, very like that last described.

The patient was a woman thirty years old. The tumour was first observed four years before its removal. A few months after the extraction of a decayed molar tooth, a small hard fleshy swelling projected from the socket. It gradually increased in size, and became lobulated, and its growth was accompanied with a constant dull pain. Caustics were applied to it, and accelerated its growth. The operation of removal was successful.

The case is reported in the "Lancet," April 22, 1837.

From the Museum of Robert Liston, Esq.

1049. Sections of a left superior maxillary bone, with a tumour formed upon it, removed by operation. A vertical section has been made from before backwards through the whole mass. The left wall of the nasal cavities, part of the lower wall of the orbit, part of the hard palate, and the second incisor and two following teeth of the left side, are shown in the upper section. The tumour extends from the posterior part of the jaw to the second bicuspid tooth; fills the whole of the antrum except a small portion at its upper part; and projects downwards and forwards with a smoothly rounded surface. Inferiorly it is covered with the mucous membrane of the hard palate and alveolus; anteriorly by parts of the buccinator muscle and the other deep tissues of the cheek; superiorly and internally by the walls of the orbit and of the nose. It is composed of a pale and white dense tissue, intersected and divided into lobes by slender bundles of circling and undulating opaque fibres. It is firm and elastic at every part except its centre and near the alveolus, where it is somewhat softer. A small cavity at the upper part of the tumour, where it was punctured, contained some pus.

The patient, Janet Campbell, was twenty-six years old, and the disease, which she

believed originated in a blow on the cheek, had been four years in progress. Ten weeks after the blow, one of the molar teeth gradually loosened and fell out; a small tumour then projected from the surrounding alveolus, and gradually extended, involving the adjacent parts of the gum, and loosening the teeth. Four months after the appearance of the tumour, the teeth of the left side were extracted, the antrum was perforated, and some pus was discharged from it; but the tumour enlarged still more, and formed a hard incompressible swelling in the cheek. During the four years after the operation there was no return of the disease.

The case is published in Mr. Liston's "Observations on Tumours of the Mouth and Jaw," in the "Medico-Chirurgical Transactions," vol. xx., p. 184, London, 1837.

From the Museum of Robert Liston, Esq.

1050. Part of the left side of a woman's face, with a large tumour on the superior maxillary bone, removed after death. The tumour is of an irregular form, superficially lobed, smoothly rounded on all its surface, concave and circular in the part directed to the cavity of the mouth. It is about six inches in its chief diameter, and involves the whole of the upper jaw, projecting far in every direction, and, especially, upwards and backwards into the orbit, and downwards upon the lower jaw, which is deeply imbedded in its substance. Like that last described, it is composed of a pale firm substance, intersected by wavy and arched white fibrous lines; and is altogether very like the common fibrous tumour of the uterus.

The disease was deemed too far advanced to be removed with safety during life.

From the Museum of Robert Liston, Esq.

1051. A left superior maxillary bone, with an enormous tumour, and the integuments over them, which were removed by operation. The several parts involved in the disease are not shown, but the mass is suspended in the position which it had before removal; the integuments covering the distended cheek being placed to the left hand. The tumour is of irregular form, superficially lobed, and smoothly rounded in every part. Its diameters are, vertically seven inches, transversely seven inches, from before backwards nearly six inches: the portion of integument removed with it measures about twelve inches in length and ten in breadth. Towards the mouth, the tumour presents a circular concave surface, projecting on every side beyond the palate. A portion cut from the left side of the

tumour shows that it is composed of a pale, whitish, firm, compact, and homogeneous substance, bearing much general resemblance to the eight preceding specimens, especially to those among them in which the fibrous texture is least marked.

The patient, Mrs. Fraser, was forty years old. The tumour began to grow six years before its removal, in consequence of a blow on the region of the antrum. Its progress at first was slow and not painful, but at the end of two years a distinct tumour was felt in the cheek. During the next two years it grew rapidly, especially during a period of gestation, but still without much pain. In the fifth year of its growth she bore a second child, after which the catamenia ceased to flow, and the tumour was subject to monthly augmentations of its vascularity; and slight hemorrhages occurred from its inner, though not ulcerated, surface, and from the adjacent parts of the gum. The patient recovered quickly from the operation, and was in good health twelve years afterwards. Only a small aperture in the cheek remained, which, as well as an aperture in the palate, was capable of being filled up by an artificial palate.

The details of the case are given in Mr. Liston's "Observations on some Tumours of the Mouth and Jaws," in the "Medico-Chirurgical Transactions," vol. xx., p. 186, London, 1837, and sketches of the patient are there, and in his "Practical Surgery," ed. 1846, p. 309.

From the Museum of Robert Liston, Esq.

1052. A left superior maxillary bone, with a tumour filling the antrum, which was removed by operation. A vertical section has been made from before backwards through the whole mass, the several parts of which may be traced by their relations to the second bicuspid and first molar teeth, and to the obliterated sockets of the second and third molar teeth. The tumour is oval in form, its chief diameters being about three inches and two inches. It completely fills the antrum, the walls of which are extended round it; and it projected on the face, in the left nostril, and backwards to the sphenoidal cells; it is chiefly composed of a firm substance, like fibro-cartilage, with spicula of bone. There are some spaces in it which contained a glairy fluid coagulable by heat, and at the anterior part is an irregular cavity containing the remains of a clot of blood.

The patient was a man of dissolute habits, twenty-four years old. Two years before the operation he received a severe blow on the left side of the face, the apparent effects of which, however, soon disappeared. The first sign of the growth of the tumour was noticed ten months before the operation, when the last molar tooth loosened spontane-

ously, and fell out, after which the gum became much swollen and tender. The tumour soon after appeared in the face, and at first grew rapidly; but its subsequent progress was slow, and not accompanied by much pain. There was no ulceration of the integuments or mucous membrane over the tumour, and all its parts felt firm and slightly elastic. Besides the parts in the preparation, the left palate bone, the root of the left pterygoid process of the sphenoid bone, and a small portion of the ethmoid bone, were removed. The patient died about ten hours after the operation.

The case is reported in detail in "The Lancet," Nov. 26th, 1836, and briefly in Mr. Liston's "Observations on some Tumours of the Mouth and Jaws," in the "Medico-Chirurgical Transactions," vol. xx. p. 198. London, 1837.

From the Museum of Robert Liston, Esq.

5. Medullary Tumours.

1053. Part of a lower jaw, including the left condyle, the alveolus of the right first molar tooth, and all the intermediate parts, which, with an enormous tumour upon them, were removed by operation. The relations of the several parts may be recognized by observing the positions of the condyle, the tendon of the left temporal muscle, and the incisor and canine teeth, which are still fixed in their alveoli. The left ascending portion and side of the jaw, as far as the canine tooth, are completely enclosed by the tumour, and it covers both surfaces of the jaw, as far as the right canine tooth. A round lobulated mass projects downwards and forwards; and in the opposite directions the tumour projects into the mouth with a rough *fungous* surface, in which a displaced molar tooth is seen. The interior of the tumour is lobulated, composed of round masses connected by cellular tissue, and of a soft texture; it is invested by a thick capsule.

The patient was a man forty-five years old, in whom the tumour had grown slowly for seven years. He died of erysipelas on the sixth day after the operation.

From the Museum of Robert Liston, Esq.

1054. A lower jaw, with a large tumour formed upon it, and implicating the tongue, larynx, and other adjacent parts. The tumour extends from the right angle of the jaw to the right canine tooth, and all the intervening part of the jaw is concealed within it. Anteriorly and below it forms a

great nodulated mass, involving the muscles of the tongue and the upper part of the neck; posteriorly and above, it projects far into the mouth, pushing aside the tongue, and pressing backwards upon the larynx. It is composed of soft medullary substance, which in several situations hangs on its ulcerated surface in long shreds.

From a lad eighteen years old, in whom the tumour was first perceived a year before his death. It seemed to commence in a gland in the cheek, which, as it enlarged, became adherent to the jaw. At the last the tumour increased very rapidly, and destroyed life by suffocation and exhaustion.

From the Museum of Robert Liston, Esq.

1055. A lower jaw, the left side of which is occupied by a growth of medullary substance, extending from the middle of the ascending portion to a little beyond the symphysis. Around the angle of the jaw, the growth forms a tumour which projects equally on both surfaces of the bone; in the rest of its extent it is scarcely prominent; but it occupies all the interior of the jaw, from which the teeth, and the greater part of the natural structure, have been removed. The destruction of the jaw, consequent on the development of the malignant substance within it, may be distinctly seen at the margin of that part which was most recently affected, below the right canine tooth: the whole of the osseous substance appears, without previous distension or any other change, to have been removed as the disease encroached upon it. The growth is covered with thickened periosteum, except at the part at which it projected into the mouth, where it has a soft uneven fungous surface.

From the Museum of Robert Liston, Esq.

1056. Portions of a rib, scapula, and clavicle, from the same patient as the jaw last described. They contain (as many other of the bones did) similar growths. The rib and scapula are fractured at the parts in which the disease is situated.

From a man sixty-four years old, in whom the tumour of the jaw had long existed, and had given great pain. His health was deeply affected, and for some time before his death he had complained of pain in every part of his body.

From the Museum of Robert Liston, Esq.

1057. The right half of a lower jaw, with a portion of its left side, including the left incisor teeth, removed by operation. A soft medullary tumour, developed in the interior of the bone, extends from the middle of the ascending portion to the first right incisor tooth. It is of an elongated oval form, and projects equally on both sides of the jaw and into the mouth. It has removed, in the progress of its growth, all the molar and the second bicuspid teeth, and has expanded, and in some situations perforated, the walls of the jaw. In these situations it is covered by the distended periosteum; and thus seems to be contained within a simple cyst, the walls of which are formed in part by thin laminæ of bone, and in part by tough fibrous tissue. An opening has been made into this cyst, in front of the coronoid process, exposing its interior, which is only partly filled with the morbid growth.

The patient was a woman fifty years old. The disease had been observed for a year, and had produced intense pain. She died a month after the operation with pleuritic effusion.

From the Museum of Robert Liston, Esq.

1058. The left half of a lower jaw-bone. A great part of its horizontal portion has been destroyed by the growth of a firm cancerous substance, which appears to have been developed on the exterior of the bone, and to have gradually produced ulceration and necrosis of it. At the angle of the jaw, adjacent to the growth, the bone is deeply and irregularly ulcerated; and near the symphysis several portions of it are completely detached. The bicuspid tooth remains in its alveolus: the others fell out, and of these, two which are preserved have some osseous deposits upon their fangs.

From a man forty-five years of age. The disease began in a hard enlargement in the situation of the submaxillary gland. After increasing for a year it extended into the mouth, where a fungous growth protruded, and the teeth and several portions of the jaw were removed. After this, the integuments of the cheek sloughed, and rapidly ulcerated, and the patient was gradually exhausted. After death carcinomatous masses were formed in the lungs and liver.

From the Museum of George Langstaff, Esq.

1059. The greater part of a left superior maxillary bone, with a tumour formed in the antrum, removed by operation. The tumour measures about two inches in its greatest diameter, and projects forwards over the right canine and bicuspid teeth. It is pale, soft, and homogeneous, and the surface of its section is like that of brain. At the upper part its tissue is broken, and was mixed with blood; in its recent state it was more brain-like.

The patient, William Thomson, was sixteen years old. The disease had been observed for two years. He had often suffered pain in the situation of the first molar tooth, which had been in a decayed state for a considerable time previous to his discovering any swelling of the cheek. During the two months preceding the operation the tumour had grown rapidly. Three years and a half after its removal the patient was in good health.

See Mr. Liston's "Observations on some Tumours of the Mouth and Jaws," in the "Medico-Chirurgical Transactions," vol. xx., p. 180, London, 1837, where this case is related as an example of malignant tumour in the antrum, removed in an early stage with permanent success.

From the Museum of Robert Liston, Esq.

Specimens of Tumours in, or involving, the Jaws in other parts of the Museum :—

Nos. 201, 248, 272, 2210A, 3236A, 3254, 3269.

SERIES XVII.—INJURIES AND DISEASES OF THE LIPS AND CHEEKS.

1060. The lower part of a mouth, in which the tongue is in several places adherent to the lower lip and left cheek.

"Feb. 3rd, 1758.—I dissected the body of a woman that died in child-bed, and had been delirious for some time.

"On looking into the mouth, I found the edge of the tongue adhering on the right side to the under lip of the same side, at two different places. One of the adhesions is about half an inch in breadth; the other less, and pretty near the tip. All the bases of the teeth on that side, beyond the canine, are rotten; and under the adhesion the stumps are crusted over with a cretaceous matter. These adhesions are very strong,

and by injecting the lingual and genial arteries they were well injected. A little way nearer the tip than the frænum, the lower surface of the tongue adheres to the gum on the inside of the dentes incisores: and on the left side of the tongue its edge adheres to the gum on the inside of the semi-grinders very strongly, so that the tongue adhered almost all round."—*Hunterian MS. Account of the Dissection of Morbid Bodies, No 46.*

1061. A portion of the cheek of a young woman, exhibiting extensive sloughing through its whole thickness.

The disease was the effect of mercury administered in jaundice. The patient, who was of scrofulous habit, died on the sixth day from the commencement of the pytalism.

The case is fully recorded in the "Catalogue of the . . . Anatomical Museum of George Langstaff," p. 477, London, 1842.

From the Museum of George Langstaff, Esq.

1062. Part of the lips and cheek of a patient with confluent small pox. It was marked "Small-pox on the inside of the mouth;" but there is no appearance of pustules on the mucous membrane; only, it is unnaturally wrinkled, and its papillæ are very large. *Hunterian.*

1063. A specimen, marked "Small-pox on the roof of the mouth," but not exhibiting any appearance of eruption. *Hunterian.*

Specimens of Diseases of the Lips and Cheeks in other parts of the Museum:—

Nos. 33, 231, 248? 2272.

SERIES XVIII.—INJURIES AND DISEASES OF THE TONGUE.

1064. Part of a tongue with some adjacent organs. The extremity of the organ was bitten off, and the surface of the wound is bordered with a thin white slough. Bristles are passed through the ranine arteries, both of which were divided by the teeth.

The patient was an epileptic idiot, sixteen years old. A short time before his death,

in a severe fit, he bit off the end of his tongue. Profuse hemorrhage ensued, and continued for two days, for it was impossible to open his mouth so as to tie the divided arteries. After this there was a fetid discharge from the mouth, and some sloughs separated; the patient grew very weak, and died insensible.

From the Museum of George Langstaff, Esq.

1065. A small lobulated fatty tumour, removed from a tongue in which it was imbedded.

From the Museum of Sir A. P. Cooper.

1066. A small, firm, flat tumour, removed from a tongue. It is of a pale colour, and uniform consistence, like the fibro-cellular tumours of the mammary gland.

Presented by Sir Everard Home.

1067. A tongue, with the fauces, larynx, pharynx, and other adjacent organs. In the left side of the base of the tongue there is a round tumour, composed of firm and obscurely fibrous substance. The mucous membrane is continued over the surface of this growth, and its base cannot be distinguished from the deeper tissues of the tongue. The mucous membrane of the left half of the palate, and that covering the epiglottis, and the upper and back part of the larynx, are thick and œdematous: the superior opening into the larynx is reduced, by the swelling of the mucous membrane, to a narrow chink.

Hunterian.

1068. A tongue, with the larynx and adjacent parts. An irregular ulcer, with hard, sinuous, and nodulated margins, has destroyed the apex of the tongue, and extended through its length to its base, where there is a wide aperture just in front of the epiglottis. On the anterior and upper part of the tongue, behind the ulcerated part of the apex, many of the papillæ are elongated and form slender processes one-eighth of an inch in length.

From a man fifty years old, in whom the disease had existed several months: it commenced at the apex of the tongue, and slowly extended backwards.

From the Museum of Robert Liston, Esq.

1069. A section of the base of the tongue of an ox, on the surface of which is a large and vascular wart-like growth. In its interior the growth

appears fibrous; on its surface, which is deeply lobed, it is covered by a softer substance.

There were growths of the same kind in the lungs and liver.

From the Museum of George Langstaff, Esq.

Specimens of Diseases of the Tongue in other parts of the Museum:—

Nos. 179, 1073, 1083, 1853-4.

SERIES XIX.—INJURIES AND DISEASES OF THE PALATE,
TONSILS, AND FAUCES.

1070. A tongue, with the soft palate, fauces, and other adjacent organs. Both the tonsils are enlarged. *Hunterian.*

1071. Parts of a palate, and a tongue, with the uvula an inch long.

From the Museum of Sir A. P. Cooper.

1072. A tongue, with the soft palate, larynx, and other adjacent organs. There is an aperture, about six lines in diameter, through the right half of the soft palate, which was made several years before death by syphilitic ulceration. Its margins are completely cicatrized.

From the Museum of George Langstaff, Esq.

1073. A tongue, with the soft palate, larynx, pharynx, &c. On the posterior part of the dorsum of the tongue is an irregular depression, produced by a partially cicatrized ulcer. The uvula is destroyed, and the posterior margin of the soft palate is cicatrized and contracted. The upper half of the epiglottis is removed, and the margin of the remaining part thickened and uneven. Immediately above the epiglottis is a deep circular ulcer on each side of the root of the tongue. The upper part of the œsophagus is contracted.

From a young woman who had long had syphilis.

From the Museum of Robert Liston, Esq.

Specimens of Diseases of the Palate or Fauces in other parts of the Museum :—

Nos. 1089, 1090-1? 1835, 1850, 1852-4-5.

SERIES XX.—DISEASES OF THE PHARYNX AND ŒSOPHAGUS.

IN the following Series it is necessary to deviate in some measure from the general plan, hitherto observed, of arranging the specimens according to structural changes alone, in order to place together the examples of *simple stricture*, that is, of mere narrowing of the canal, independent of any tumour growing within or upon it, and whether connected or not with inflammatory thickening and induration of the tissues at the constricted part. These cases of simple stricture—and what is said of those in the œsophagus is true also of those in other mucous canals—derive their chief importance, and all their common characters and consequences, from the change of form: this may, therefore, justly, be taken as a ground of arrangement, and the more so because it is in some cases not connected with any obvious change of structure.

Other kinds of stricture, such as those produced by tumours, or other morbid growths, within canals or pressing on them from without, are placed with the rest of the specimens of such growths; for in these the narrowing of the canal is only an accident of the morbid growth.

The examples, also, of *dilatation*, both of the œsophagus and of other similar canals, deriving their chief interest from the change of form and size of the affected part, are, for the like reason, placed together; they will be found next after the specimens of simple stricture.

1074. The œsophagus of a man who died with symptoms of hydrophobia. The epithelium appears rather thicker than is usual; a portion of it is removed to show the smoothness of the subjacent mucous membrane.

Hunterian.

1075. The lower part of the œsophagus, with part of the stomach, of a man who died with symptoms of hydrophobia from a bite. The epithelium of the œsophagus appears in this, as in the preceding preparation, thicker than is usual, but presents no peculiar structural alteration.

Hunterian.

Probably both these preparations were made to show that there is no morbid change of structure in the œsophagus in hydrophobia; a fact which Mr. Hunter recorded in the following case:—

“Hydrophobia.

“ — Robertson was bit by a young dog, in the lip, on Wednesday the 18th of December, 1776. On Sunday the 19th of January, 1777, when from home, was taken with a sickness in his stomach, and a disagreeable sensation in his throat. The uneasiness in his throat increased, and a considerable difficulty in swallowing fluids. This was more than simple difficulty or pain in swallowing; it produced an universal irritation, which flew up to his head, and made him almost mad at the time, and he felt the sensation of his mouth and throat being on fire. He could swallow any solid much better than fluids. He could not, or rather durst not, swallow his own spittle. They gave him some orange, which, melting into a fluid in his mouth, gave him as much pain as water. They gave him sugar-candy, and it also, by melting in the saliva, gave equal pain in swallowing.

“ His mind was in a state of great irritability, as also his body, universally. When he saw anything which had given him those sensations in swallowing, it almost produced immediate madness. He accidentally looked out of the window and saw water; he immediately started back, and so quick as to fall. If a door or window was opened, and fresh cold air came in, he immediately felt it, and begged they might be shut, the sensation was disagreeable: he disliked the blankets being raised, as the cold air was allowed to come in. Warmth appeared agreeable: he could hardly bear the light, at least it was disagreeable, as also noise. He complained at times of a tightness across the breast.

“ He flew into passions, and more readily if any one desired him to drink. He became very suspicious of every one round him. At times, when nothing externally disturbed him, he was pretty calm, and talked reasonably, knew his situation, but flew into a passion immediately upon the slightest occasions. Was very quick in his answers: talked freely and articulately, appearing to have no difficulty in that action similar to a sore throat.

“ All the above symptoms kept increasing from Sunday until the Thursday following, when he became at times outrageous, both from the increase of the disease, and being teased with people calling, staring, and importuning him to drink. At last an attempt was made to secure him, but they failed, and two men got bit in the hand; however, at about seven o'clock in the evening he was seized, and carried to the Infirmary at Marylebone, and strapped down to the bed, and begged to be left alone, as he wished to be quiet. He then complained much of the tightness across his breast

from the straps. About nine, some people went to see him, and he spoke to them ; about seven on the Friday morning he was found dead.

" On the same day about one o'clock I opened his fauces, throat, and œsophagus, and found nothing remarkable or præternatural. The salivary glands [and] the muscles of these parts were perfectly sound, nor was there anything remarkable in the part that had been bitten.

" From all the symptoms, and from nothing appearing diseased after death, this disease would seem entirely nervous.

" It is similar in many effects to nux vomica on a dog."—*Hunterian MS. Cases in Surgery*, p. 316.

1. *Foreign Bodies from the Pharynx, or Œsophagus.*

1076. A halfpenny which was swallowed by a child sixteen months old. It remained in the stomach six months, and was then vomited.

From the Museum of Sir A. P. Cooper.

1077. " On Thursday the 1st of May, 1798, Doctr. R. Willis did me the favour to call on me to desire me to see a gentleman, a patient of his, who was insane, who on the Saturday night before, at twelve o'clock, had rammed down his throat this handle of a punch-ladle (ten inches and a half long), with an intent to destroy himself.

" I went to him at two o'clock, and extracted it, after it had been in his throat sixty-two hours without producing any ill, he having eat, drunk, and slept as usual during the whole time, and was next day free from complaint."—*MS. note accompanying the preparation.*

From the Museum of John Heaviside, Esq.

2. *Simple Strictures of the Œsophagus.*

1078. Part of a pharynx, with the larynx. Opposite the lower margin of the cricoid cartilage there is a projecting annular fold of the mucous membrane, about a line in depth, narrowing the passage into the œsophagus. The

adjacent parts appear healthy, and the fold composed of healthy mucous membrane; the canal around the fold is slightly constricted.

Hunterian.

1079. A pharynx and œsophagus, with the adjacent organs. Just below the cricoid cartilage, the canal of the œsophagus gradually contracts to half its natural diameter, and then gradually dilates again. The mucous membrane at the contracted part forms transverse sharp-edged and projecting folds, which extend round the whole, or the chief part, of the circumference of the canal; it also seems condensed, as if by cicatrization.

Hunterian.

1080. Parts of the pharynx and œsophagus, with the larynx and trachea of a child. At the level of the lower margin of the cricoid cartilage, the commencement of the œsophagus is reduced to less than half its natural diameter by a sudden contraction of its walls. The tissues at and around the stricture are not visibly altered, and the canal above and below it is healthy.

Presented by Sir Everard Home.

This and the two preceding preparations present examples of the disease to which Sir Everard Home applied particularly the name of stricture in the œsophagus, and in which he believed that the use of caustic bougies was chiefly beneficial. See his "Practical Observations on the Treatment of Strictures in the Urethra and Œsophagus," vol. ii., p. 395, &c., London, 1803; and the next following specimen.

1081. A pharynx, with the upper portion of the œsophagus, the soft palate, and other adjacent parts, in which it was supposed that a stricture, like that last described, was nearly cured by the use of caustic bougies. No trace of stricture can now be seen; but, opposite the lower border of the cricoid cartilage, and for some distance above it, there is an extensive superficial shreddy ulcer, a part of which is blackened with nitrate of silver. There is a similar ulcer on the upper surface of the soft palate; and all the adjacent tissues, including the mucous membrane over the upper and back part of the larynx, are very thick and œdematous.

From a lady of very nervous temperament, forty-six years old, who had "a narrow swallow" from childhood, and in whom the difficulty of swallowing had been so great

during the last two years of her life that she took only liquids. She was subject also to attacks of a sense of suffocation and of loss of voice. Caustic was applied many times to the supposed seat of obstruction, and with apparent relief. But during its use she was frequently attacked with the sense of suffocation, and on one of these occasions died.

The case is related, and the preparation is engraved, in the "Practical Observations on Strictures, by Everard Home, Esq.," vol. ii., p. 414, London, 1803.

Presented by Sir Everard Home.

1082. A pharynx and œsophagus, in which the canal of the latter, through about an inch of its length, is reduced, by thickening and contraction of its walls, to one-sixth of an inch in diameter. Above the stricture the œsophagus is dilated, its walls are thick and muscular, and a small portion of its mucous membrane is dark and ulcerated: below the stricture it is reduced to half its usual size, and its walls are very thin and flaccid. The mucous membrane at the back of the larynx is loose and wrinkled, as if it had been œdematous.

From a woman forty-five years old, in whom the disease had long existed. It was treated with caustic, which probably produced the ulceration and œdema above the stricture. She died of inanition.

From the Museum of Robert Liston, Esq.

1083. A pharynx and œsophagus, with the tongue and adjacent parts, from a boy ten years old. At the level of the cricoid cartilage, and through an extent of about an inch below it, the walls of the œsophagus are thickened, and its canal is reduced to hardly more than a line in diameter. The greater part of the tongue has lost its papillary structure, and is covered with a thin, wrinkled, and polished cuticle, like that of a superficial cicatrix.

These changes were consequent on swallowing some sulphuric acid. The stricture was treated with bougies.

From the Museum of Robert Liston, Esq.

1084. A pharynx and œsophagus, with the adjacent organs. Below the cricoid cartilage the canal of the œsophagus is contracted to one-third of its usual diameter. The stricture is continued for about half an inch, and is

abruptly terminated by a projecting transverse fold, below which the canal is uniformly dilated to much more than its usual size. At the stricture the mucous membrane appears somewhat condensed, and its surface is smooth and shining: above the stricture, the walls of the canal are thickened by an increase of their muscular tissue; below it, in the dilated part, they are very thin, and their inner surface is creased, and irregularly wrinkled. *Hunterian.*

1085. Part of an œsophagus, of which the canal is nearly closed opposite the bifurcation of the trachea, partly by slight thickening of its walls, but chiefly by the pressure of an enlarged and indurated lymphatic gland upon its posterior and lateral walls.

Presented by Sir William Blizard.

3. *Dilatation of the Pharynx or Œsophagus.*

1086. A pharynx and œsophagus, with the larynx and trachea. At the lower and posterior part of the pharynx there is an oval pouch, about two inches long, and an inch in diameter, formed by a hernia-like dilatation of the mucous membrane. The pouch opens with a wide orifice into the cavity of the pharynx, and is lined with a continuation of the mucous membrane, but the muscular coat is not continued over it. All the adjacent tissues are healthy. The larynx and epiglottis are very large.

The patient was a bishop, ninety years old. The origin of the disease was unknown. The pouch at last used to receive the greater part of the food, and when it was filled the patient was in the habit of pressing up the side of the neck, so as to empty the pouch into the œsophagus. He had also long suffered from a fistulous opening into the gall-bladder, through which two gall-stones had been discharged externally.

Presented by William Guy, Esq.

4. *Ulceration of the Pharynx or Œsophagus.*

1087. The lower half of an Œsophagus, of which the canal immediately above the cardia is reduced to one-eighth of an inch in diameter. The walls are at this part thickened and condensed, and the mucous membrane is superficially ulcerated. Above the stricture the Œsophagus is considerably dilated, its muscular coat is hypertrophied, and there are several superficial circular and oval ulcers of its mucous membrane.

The patient was a man upwards of sixty years old, in whom the characteristic signs of this disease commenced about four months after a dislocation of the second from the first portion of his sternum, and one month before his death. During the last month he was much emaciated, and vomited everything that he swallowed. When he drank small quantities of milk they remained for several hours, and were then thrown up, coagulated. His medicines, after being retained for the same time, were returned but little altered.

After death the stomach was found contracted, and its coats were very thin. Its mucous membrane, as well as that of the whole intestinal canal, was highly vascular. Above the stricture the Œsophagus contained a large quantity of coagulated milk. The dislocated sternum is preserved in Series xiii., No. 865, described in Vol. ii., p. 203.

Presented by Joseph Swan, Esq.

1088. Parts of a pharynx and Œsophagus, of which the canal just below the level of the cricoid cartilage is reduced to a diameter of a quarter of an inch, by thickening and contraction of the mucous membrane and the tissue beneath it. The thickening extends upwards to the level of the hyoid bone, and downwards in a less degree along the rest of the Œsophagus. The interior of the canal, at the most contracted part, is ulcerated, rough, and flocculent: in two points, marked by portions of quill and whale-bone, the ulceration has penetrated the walls of the canal, and has passed round to the front of the trachea, forming narrow sinuous passages like fistulæ.

Hunterian.

This preparation is represented in Baillie's "*Morbid Anatomy.*" Fasc. iii., pl. iii., fig. 2.

1089. Parts of a pharynx and œsophagus, with the adjacent organs. Just below the cricoid cartilage, the canal of the œsophagus, through a length of about two inches, is reduced, by thickening of its walls, to two-thirds of its natural calibre. At the lower part of the stricture there is a large irregular ulcer, extending deeply into the mucous membrane of the anterior wall of the œsophagus and the adjacent indurated tissues. Near the lower margin of this ulcer there are, also, three smaller ulcers leading, through apparently healthy mucous membrane, to cavities of wider extent, like the cavities of small abscesses in the submucous tissue.

Presented by Sir Everard Home.

5. *Polypi and other probably innocent Tumours in the Pharynx or Œsophagus.*

1090. A large, soft, and semi-transparent mass, like a gelatinous polypus of the nose, deeply divided into numerous lobes, which was removed from behind one of the tonsils. It was attached by the narrow pedicle which is now shown at its upper part.

Presented by Sir William Blizard.

1091. "A polypus from the fauces, removed by ligature, successfully."—(Sir A. P. Cooper's MS.) It is a firm mass, of irregularly spheroidal form, superficially lobed, nearly two inches in its chief diameter, and having at the upper part a narrow portion, by which, probably, it was attached. The greater part of it is covered with mucous membrane, patches of which appear superficially ulcerated.

From the Museum of Sir A. P. Cooper.

6. *Cancerous Tumours and Ulcers in the Pharynx or Œsophagus.*

1092. An œsophagus, of which the walls are increased to nearly half an inch in thickness by the formation of a layer of dense, greyish, semi-transparent

substance, intersected with white fibrous transverse bands, between the muscular and mucous coats. The canal is contracted throughout its length, to a diameter of one-third of an inch; the muscular walls appear healthy; the internal surface is rough, but not ulcerated. The disease, which exactly resembles the diffused cancer of the stomach shown in Nos. 239, 1160, &c., ceases at the lower end of the œsophagus, and the cardiac portion of the stomach is healthy. *Hunterian.*

This preparation is represented in Baillie's "Morbid Anatomy." Fasc. iii., pl. iv., fig. 2.

1093. Portions of a pharynx and œsophagus, with the larynx and trachea. On the mucous membrane of the lower part of the pharynx, there are several growths of a moderately firm and, probably, medullary substance, with lobulated and wart-like surfaces. The largest of them is about an inch and a half in length, and an inch in thickness: it is situated in the middle of the anterior wall of the pharynx, and projects so far upwards and forwards that it nearly touches the epiglottis, and closes the aperture into the larynx. Its surface is unevenly lobular, but smooth, like that of mucous membrane. Above it, on the right wall of the pharynx, is a small wart-like growth, composed of short papillary bodies; and on the left wall, is a smooth, flat, circular growth, attached by a narrow base, and hanging, like a polypus, into the cavity. Below the largest growth the mucous membrane of the pharynx is ulcerated.

The tumour was several years in progress, and the patient died of inanition.

Presented by — Jefferys, Esq.

1094. A pharynx and œsophagus, with the larynx, tongue, and other adjacent parts, from a female sixty years old. The walls of the pharynx are almost entirely occupied by large, flat, lobulated tumours, composed of a firm medullary substance, with surfaces partially ulcerated and shreddy. They nearly fill the cavity of the pharynx, and, by pressing forward the arytaenoid cartilages, have obstructed the passage into the larynx. At the upper part of the œsophagus, is a round mass of the same substance, about

an inch in diameter, the greater part of which is lodged within a saccular dilatation of the walls of the canal.

From the Museum of Robert Liston, Esq.

1095. A pharynx, with a part of the œsophagus, the larynx, and other adjacent organs. The walls of the pharynx and œsophagus, from the back of the arytenoid cartilages to the bifurcation of the trachea, are nearly covered with growths like those last described, but partly destroyed by coarse irregular ulceration, so that a great part of their inner surface is ragged. Below the trachea there are several small white circular elevations of the mucous membrane of the œsophagus, with superficial ulcerations, as if tumours of the same kind had been growing beneath it.

From a woman forty years old, who had had difficulty of swallowing for many years. During the last two months of her life this difficulty was extreme. She had also cough and offensive expectoration; and, a few days before she died, had signs of croup.

The small elevations of the mucous membrane extended far down the œsophagus: there was no other cancerous disease.

Presented by Joseph Swan, Esq.

1096. A pharynx, with the larynx, and other adjacent parts. The posterior walls of the pharynx are occupied by a large soft carcinomatous growth, presenting a spongy texture, and deeply grooved and fissured on its surface. The walls of the upper and posterior part of the œsophagus are increased to about half an inch in thickness by similar disease. The anterior wall of the pharynx appears to have been very œdematous. *Hunterian.*

1097. A pharynx and œsophagus, with the tongue, larynx, trachea, and other adjacent parts. A broad flat growth of a spongy substance, with an elevated sinuous margin, extends around the lower part of the pharynx and the upper part of the œsophagus. Its surface appears fibrous, and is like that of an epithelial cancer: it is in many places deeply cracked, as if its interior were also fibrous: in other parts it is ulcerated. On the right side, the ulceration has extended deeply, and penetrated through the posterior wall of the larynx, immediately below the thyroid cartilage,

making an irregular aperture in it, about a quarter of an inch indiameter. A portion of the thyroid cartilage, ossified and exfoliated, lies loose in this aperture. The cervical glands adjacent to the disease are enlarged. The mucous membrane covering the arytænoid cartilages is œdematous; but the rest, as well as the other textures of the œsophagus, above and below the cancer, appear healthy.

From the Museum of George Langstaff, Esq.

1098. A larynx, with parts of the pharynx and œsophagus. At the union of the pharynx and œsophagus there is a broad thin growth of a compact, obscurely medullary substance between the layers of their walls, fibrous, projecting inwards, and greatly narrowing the canal. The inner surface of the canal, at the seat of the growth, is irregular, but is in part covered by mucous membrane.

From a person seventy years old. Signs of the disease had been observed five months before death.

From the Museum of Sir A. P. Cooper.

1099. Parts of a pharynx and œsophagus, with the larynx, tonsils, and other adjacent organs. The lower part of the walls of the pharynx is occupied by a large ragged ulcer, with an overhanging sinuous margin, which has in some parts penetrated very deeply. Below it, the canal of the upper part of the œsophagus is reduced, by the thickening of its walls, to half its natural calibre. The space between the epiglottis and the arytænoid cartilages is much diminished by the left arytæno-epiglottic fold of membrane being pressed inwards by the thickened tissues in its vicinity.

From the Museum of John Heaviside, Esq.

1100. A portion of an œsophagus, of which all the mucous membrane, through a length of about three inches, is destroyed by an ulcer of irregularly oval form, with slightly elevated sinuous margins, and a base which has a reticular aspect, and is intersected by prominent, coarse, fibrous bands. The middle of the ulcer is deeper than any other part of it, and here it has at one situation penetrated through the front of the œsophagus, making an oval aperture, to the margins of which a portion of the left lung is

adherent. Beyond this aperture, also, the ulceration has extended for a short distance into the substance of the lung itself. *Hunterian.*

1101. An œsophagus, with the lower part of the trachea. The walls of the former, through a length of about four inches, are deeply ulcerated. The ulcer has the same general characters as that last described, but its surface is softer, and is nearly covered with coarse flocculent shreds. It has penetrated through the front of the œsophagus, making in it an aperture an inch in diameter, to the margins of which the cellular tissue of the posterior mediastinum is closely adherent. *Hunterian.*

1102. Portions of a pharynx and œsophagus, with the adjacent organs. The mucous membrane of their anterior wall, extending from the cricoid cartilage about four inches downwards, is destroyed by an ulcer which has an uneven shreddy surface, and nearly resembles in its general appearance that last described. *Presented by Sir Everard Home.*

1103. A pharynx, with the larynx, and other adjacent parts. Through a length of about two inches below the arytaenoid cartilages, the walls of the pharynx and of the upper part of the œsophagus are deeply and irregularly ulcerated, apparently after the degeneration of a flat mass of cancer. On the left side, the ulcer has exposed part of the cricoid cartilage, and the inferior horn of the thyroid cartilage, and has extended into the substance of the thyroid body. *Presented by Sir William Blizard.*

1104. An œsophagus, with parts of the trachea, aorta, pulmonary artery, and right lung, all unnaturally adherent. An ulcer of cancerous appearance, commencing at the level of the bifurcation of the trachea, and extending about four inches downwards, has destroyed the left, and a part of the posterior, wall of the œsophagus. The remaining portions of the wall are rough, but not flocculent, and all the rest of the canal is dilated and slightly thickened. There is a soft deposit of fatty matter in the walls of the aorta. *Hunterian.*

1105. Parts of a pharynx and œsophagus, with the larynx and trachea. All the mucous membrane of the pharynx below the level of the arytaenoid cartilages, as well as that of the upper part of the œsophagus, is destroyed by an irregular, deeply spreading, ulcer, with a hard, uneven base. At its lower part, the ulcer has made several large round apertures through all the membranes of the canal, and just below the cricoid cartilage has penetrated into the trachea.

Presented by Sir Everard Home.

1106. Parts of a pharynx and œsophagus, with the larynx and trachea. On each of the lateral walls of the middle and lower parts of the pharynx, there is a similar deep ulcer, more than an inch in length. Just below the level of the thyroid body, the anterior wall of the œsophagus, through a length of about two inches, is completely destroyed by an ulcer, similar to that last described, which has also spread round the left side of the adjacent part of the trachea, and by removing its mucous membrane and the tissue external to it, has completely exposed parts of four of the cartilaginous rings.

Presented by Sir William Blizard.

1107. A pharynx and œsophagus, with the larynx and trachea. The walls of the upper part of the œsophagus are completely destroyed by an ulcer, which has a granulated base, and an abrupt sinuous margin. At its centre, the ulcer has extended into the trachea, through the posterior wall of which it has made an oval aperture with everted edges, and measuring about three-quarters of an inch in its longest diameter. The mucous membrane around the borders of the ulcer appears healthy.

From the Museum of Robert Liston, Esq.

1108. Parts of a pharynx and œsophagus, with the adjacent organs. The whole of the mucous membrane, through an extent of about four inches below the arytaenoid cartilages, is much thickened, and its internal surface is ulcerated, soft, and pulpy, perhaps from degeneration of gelatiniform cancer. Lower down in the œsophagus, there is a circular elevated ulcer,

about half an inch in diameter, with a similar soft surface. The thyroid body is enlarged. *Hunterian.*

Specimens of Disease of the Pharynx or Œsophagus in other parts of the Museum :—
Nos. 1170, 1171, 1174.

SERIES XXI.—INJURIES AND DISEASES OF THE PERITONEUM.

(*Not including Displacements.*)

1. *Dropsy.*

1109. A stomach, with the great omentum. The cavity of the omentum was distended by fluid. Its texture appears healthy, and there is little fat on it. *Hunterian.*

2. *Peritonitis, and its consequences.*

THE following extract from the “Medical and Philosophical Commentaries, by a Society in Edinburgh,” vol. iii., part 1, p. 322, London, 1775, is appropriate to this subject, and to the next succeeding Hunterian preparations.

“Mr. Cruikshank of London, in a letter to Dr. Duncan, gives the following account of Mr. John Hunter’s opinion of the puerperal fever :—

“Mr. Hunter, in some lectures which he read at his own house last winter, among other things, treated of the inflammation of cavities. He told his pupils, that he wished to impress them with horror at the thought of exposing any large cavity in the animal body. He affirms that, when any such cavity is laid open, it begins soon after to inflame; that this inflammation, for the most part, spreads over the whole cavity, and terminates in suppuration, granulation, and an obliteration of the cavity. He admits that, sometimes after the whole of a cavity has inflamed, the sides may unite by what he calls the adhesive inflammation, without going on to suppuration or granulation.

Of this, there are instances in the case of the tunica vaginalis propria testis, when the operation for the radical cure of the hydrocele is performed. Even parts of cavities may, he thinks, unite also in this manner, at the beginning of inflammation, and prevent the inflammation from spreading over the whole cavity. By this means, in cases of the operation above alluded to, the surgeon will sometimes be disappointed in endeavouring to bring about a radical cure.

“ Mr. Hunter thinks that, when the inflammation of a cavity terminates in adhesion merely, the danger is less than when it terminates in suppuration and granulation: and if the cavity be small, and of little importance, the danger may sometimes be very inconsiderable. More frequently, however, while cavities are going through the different stages of inflammation, suppuration, and granulation, the irritation thus induced on the system is great enough to destroy the patient.

“ As an example of the inflammation of an internal cavity destroying a patient in this manner, Mr. Hunter points out the inflammation of the peritoneum after labour; a circumstance which he maintains frequently proves fatal to lying-in women. This disease has commonly been called puerperal fever. But Mr. Hunter thinks that it may more properly be denominated inflammation of the peritoneum, because he finds the peritoneum to be only, or principally, affected. He affirms, that the substance of the uterus, the abdominal viscera, and the muscular and villous coats of the intestines, in general, remain sound. And when the inflammation does pass to these, he thinks that it is from consent with the peritoneum, the inflammation always beginning in that part.

“ Mr. Hunter does not refuse that lying-in women may have fevers peculiar to themselves, and that such fevers may kill. But he is convinced, from what he has seen on dissection, that the disease most frequently fatal to them is merely an inflammation; and that the febrile symptoms are like those after the amputation of a limb, owing to an injury done to a particular part, and not to any specific disease.

“ This inflammation of the peritoneum is not, he thinks, peculiar to women. He has often seen it take place in men after the operation of the paracentesis, for the dropsy of the abdomen. In such cases the disease had the same consequence, as well as the same cause, as in women.

“ The cause he believes to be an injury done to the peritoneum, as forming a cavity. By such causes, its present state is either suddenly changed, or it is rendered imperfect. The injury done to the peritoneum, in the case of women after delivery, he ascribes to two causes. Sometimes it proceeds from want of disposition in the womb to recover itself after labour. By this means, the peritoneum, as a cavity, must necessarily be affected. At other times, it proceeds from the too sudden emptying of the abdomen. By this means, the peritoneum will not always recover itself, so as to be properly adapted to its new state. This last cause may also hold with men after the operation of the paracentesis. But in them, besides the sudden emptying of the abdomen, there is the additional circumstance of a wound, which renders the peritoneum, as a cavity, imperfect.

“ The circumstances mentioned above have, he thinks, the same effect on cavities in

animal bodies, as if these cavities were laid open, or as if they were stimulated internally by some extraneous matter. They must inflame; and if that inflammation cannot terminate in adhesion, they must suppurate, granulate, and endeavour to adhere, in the second method.

“The inflammation of the peritoneum sometimes terminates in consequence of an adhesion taking place between the sides of the parts first inflamed. In these cases the progress of the inflammation is prevented, and the rest of the cavity is secured. But, along the adhering parts, there are intermediate spaces, which, from want of vicinity, cannot adhere. These go on to suppurate, and the abscess leads outwards to the skin. As a proof of this, Mr. Hunter has opened abscesses in the groins of women, a short time after delivery, which had begun with all the symptoms of puerperal fever. But, on opening the abscesses, these symptoms disappeared, and the patients recovered.

“When, however, an inflammation of the peritoneum occurs, it most frequently happens that it spreads over all the cavity of the abdomen. There takes place an extravasation of fluids into that cavity, mixed with pus. The different viscera adhere by their peritoneal coats. The intestines are distended with air. And the irritation thus induced kills the patient long before granulations, or an obliteration of the cavity in the second method, can take place.”

1110. A portion of injected small intestine, the peritoneal coat of which is more than naturally vascular, and has a few slender shreds of lymph attached to it. *Hunterian.*

1111. A portion of peritoneum, from a case of peritonitis, dried after the minute injection of its blood-vessels. A slender piece of lymph, in which vessels are injected, is attached to the surface of the membrane.

Hunterian.

1112. Several convolutions of small intestine, united in one mass by adhesions. Their vessels are imperfectly and unequally injected. In some situations thin layers of false membrane have been reflected from the peritoneal coat; in others there are fine loosely hanging shreds. *Hunterian.*

Probably this specimen is a portion of what Mr. Hunter thus described:—

“*Winter, 1764.*—We dissected a young woman. On opening her belly we found almost an universal adhesion, both of viscera to viscera, and viscera to peritoneum. However, there were some places where adhesions could not take place, on account of some water keeping them separated.

“The adhesion was not of long standing, as it gave way to a gentle force, and only

seemed to be like half-dried glue, or much of the consistence that the coagulated lymph has, when separated from the red globules and serum : and, indeed, it seemed to be nothing else ; and the loose water in the abdomen nothing but the serum that had separated from it, as it began to coagulate.

“ I injected a piece of intestine so glued together by the mesenteric vessels, and found that this covering of coagulable lymph was extremely vascular, and where the intestine had been separated from the peritoneum, to which it had adhered, that the injection came out on the surface like small red drops ; and I peeled off a part of this adventitious covering, and found it extremely vascular.

“ *Query.*—How are these vessels formed? are they elongations of the exhaling vessels forming arteries?

“ The gall-bladder was very large, and had a good many stones in it ; and there were some small stones in the ductus communis. The inside of the intestines did not seem to have been affected by the disease on the outside.”—*Hunterian MS. : Dissections of Morbid Bodies*, No. 76, p. 105.

1113. Part of an urinary bladder, with a thick layer of lymph deposited in the peritoneal pouch behind it. The coats of the bladder are thickened, and the inner surface of its mucous membrane is wrinkled and granular, as if it had been inflamed. *Hunterian.*

1114. A layer of coagulated lymph, about half a line in thickness, from the walls of an abdomen, eight days after the operation of tapping. Its substance is tough and compact ; and, attached to its inner surface, there are several very thin and delicate broad processes or membranous ridges of lymph, which probably lay between convolutions of the intestines.

Hunterian.

1115. Portions of liver and diaphragm, with long and delicate bands and cords of false membrane extended between their opposite peritoneal surfaces.

From the Museum of George Langstaff, Esq.

1116. A convolution of an ileum, partially laid open. At one part, the opposite peritoneal surfaces of the convolution are connected by a band of false membrane, round which a bristle is tied. There are several small circular ulcers of the mucous membrane.

Hunterian.

1117. “ Part of an epiploon, having thickened without inflammation, similar to

tumour.”—(*Hunterian MS. Catalogue.*) It has the appearance of an omentum indurated, folded up, and contracted towards the lower border of the stomach, in a manner often observed in cases of ascites, and is probably the specimen which Mr. Hunter has further described in the following case:—

“*Winter, 1764.*—I dissected a man who was very thin, and his belly was pretty full of water. When I opened the belly I found all the peritoneum much thickened. The mesentery was thickened, and much contracted, especially at the fixture of the guts, which threw the guts into small convolutions. The epiploon was so contracted, or puckered together, as to bind the transverse arch of the colon, the great curve of the stomach, and spleen, all together; and by its adhesion to the pancreas and mesocolon, they were likewise in this union. The epiploon was very hard and knotty. The stomach, by the same disease, was contracted near the small end [and] thick in its coats at this part. The meso-gaster and the cellular membrane that surrounds the vessels of the liver became thick and hard, so much as to obstruct the passage of the bile into the gall-bladder, for there was no bile in the bladder.

“The gall-bladder was vastly large, it projected beyond the lower edge of the liver above two inches, and its coats were very thin. On opening it I found that it contained a thin pale fluid, of a light coloured whey, which had not any of the properties of bile. The inside of the gall-bladder was smooth, owing to its being so much stretched. The bile got easily into the gut, and was of a bright yellow.

“The liver rather less than common, softer, yet tougher than common.

“From this case may we not reasonably suppose that the gall-bladder does not secrete the bile; or that there are no ducts passing directly between the liver and bladder where these two adhere; for at the adhesion of the two the parts seemed sound?”—*Hunterian MS.: Dissections of Morbid Bodies*, No. 89, p. 139.

1118. A firm lobulated mass, like thickened and indurated omentum, which protruded and was removed through a bayonet-wound in a soldier's abdomen. *Hunterian.*

The following history of the case was probably sent to Mr. Hunter with the preparation:—

“Josh. Wood, aged twenty-one, second gunner in the second battalion of Royal Artillery, being on duty on the gun-wharf, near Chatham Barracks, in June 1788, attempted (as was supposed in a fit of insanity) to destroy himself by falling on his bayonet. It entered the abdomen nearly in a parallel line between the navel and cartilage ensiformis, and, as we afterwards found, had passed through the back, close on the left side of the vertebra opposite, without injuring the intestines, &c.

“When I first saw him I attempted to pass my finger or a probe into the cavity of the abdomen, but could not find any passage. After he was taken to the hospital,

towards the evening, we found a good deal of blood had come from the wound. The wound on the abdomen was dressed superficially, and that which we found in his back was dressed in the same way; indeed very little attention was paid to that, it being but small, and no blood appearing again.

"The next day a large substance, in appearance a conglomerate gland, had been found or drawn out with his fingers through the anterior wound, and lay on the outside of the abdomen; it very much resembled the pancreas in substance and colour, and though I attempted to reduce it I could not succeed. A poultice was laid on it, and renewed for two days, when it was judged proper to extirpate it by ligature, which, though tightened every day for ten days, did not prevent a supply of blood, as it was not the least discoloured till the last day, when, in two or three places, it had a dark appearance, but no disagreeable smell. A great mucous discharge exuded from it the whole time, so that his shirt was obliged to be changed every day, although the substance was surrounded with fresh tow.

"His pulse, notwithstanding his loss of blood at first, never sunk; had little or no fever; the natural secretions were carried on, and his appetite was not bad. He slept well in general, and never complained of pain till after the wound was healed, which was very shortly after the substance was removed; he then complained of pain about the part injured, when costive, which was easily removed by the electuary and senna.

"Since he went to Bradford, in Yorkshire, his place of residence, I received a letter from Mr. Knight, a surgeon there, to whom I had written, inclosing the case, who says he continues well in every respect except when costive, which complaint is easily removed, as above.

"The above substance is flat, between four and five inches long, three broad, and near one thick, of consistence somewhat like a very strong coagulum, and of a colour nearly approaching the same. The texture has nothing of a regular or organized appearance, therefore is none of the viscera of the abdomen, and therefore must be a preternatural or diseased substance.

"From one view of this case it would appear a very extraordinary one, for supposing it to have been a diseased tumour in the belly, the circumstance of the man wounding himself at the very part is a concurrence of circumstances that would almost appear miraculous; and that such a lump should have come through a wound made by a simple stab with a bayonet is almost beyond belief; but if we can conceive that a portion of the epiploon pushed through, forming a sac, and this filled with blood, which coagulated, and the serum escaping, then, I believe, we may form a pretty just idea of it."—*Hunterian MS.: Cases and Observations*, No. 86.

Memorandum annexed by Mr. Clift.—"This case appears to have been drawn up by the regimental surgeon, who attended the patient, and sent the protruded substance to Mr. Hunter, as it is impossible that Mr. Hunter should be a fortnight at Chatham in the year 1788. The last two sentences may possibly be Mr. Hunter's remarks on the case; but as they are not in his hand-writing, there is no clue to distinguish them. Mr. George Grant, an army surgeon, who had been a pupil of Mr. Hunter, and occasionally his amanuensis, very probably sent this case and specimen, as he is known to have done on other occasions about this period."

1119. "A portion of tuberculated omentum."—(*Hunterian MS. Catalogue.*)

It is thickened and indurated, but does not appear to be otherwise altered in texture.

1120. An omentum attached to the neck of a hernial sac, and in many parts much thickened and indurated. At its connection with the sac nearly all the adipose tissue has been removed from the omentum: it is here converted into a tough glistening fibro-cellular tissue, like that of the thickened sac and other adjacent parts. In many parts, also, nearly all its tissue has been removed, leaving a wide-meshed irregular network, formed of smooth, shining, round cords, of various thickness and length (like blood-vessels long obliterated), variously branching and connected one with another. In some parts, where the fat and other tissues of the omentum remain, and are only indurated, its surfaces are thickened and contracted, and shine like the surfaces of cicatrices.

From the Museum of Sir A. P. Cooper.

3. *Cysts, Tumours, &c., in the Peritoneum.*

1121. Part of a rectum, to the front of which a small cyst is attached by bands of false membrane.

Presented by — Ewbank, Esq.

1122. A portion of omentum (not human), in which are two large thick-walled cysts, with earthy matter deposited in their walls. The internal surface of the cyst which is laid open is wrinkled, rough, and of a yellowish brown colour.

Hunterian.

1123. The omentum of a cat, with numerous small tumours attached to its surfaces. The tumours are round or oval, and some of them superficially lobed: they are of various sizes, from half a line to half an inch in diameter; some of them are isolated, many are grouped together in irregular large masses; they are all slenderly attached to the omentum, the tissue of

which, even on the parts to which the tumours are attached, appears healthy. The surfaces of all the tumours are smooth, and of a pale yellowish-white colour. Sections of some of them show that they are composed of an uniform, compact, but soft, pale yellowish substance, traversed here and there by obscure fibrous lines.

From the Museum of George Langstaff, Esq.

1124. A stomach, with part of the great omentum. The omentum is very much enlarged; it measures fourteen inches in length; its fat is nearly all removed, and it is beset by numerous tumours, various in size and shape, but closely resembling those last described, except that they are rather paler and firmer, and are intersected by numerous short, wavy, and circling white fibres. At the lower part of the omentum, many of these tumours are collected into one large, irregular, nodulated, hard mass: some of the same kind are attached along the lesser arch of the stomach. The texture of the omentum intervening between the tumours is healthy.

The patient, a female twenty-one years old, was considered to have all the signs of pregnancy, and the time for delivery being past, was supposed to have an extra-uterine foetus, the masses of tumours felt through the distended abdominal walls being thought to be parts of a child. She died of pulmonary phthisis. The other abdominal organs, and the uterus and ovaries, were healthy.

From the Museum of Robert Liston, Esq.

1124A. Section of a mass of gelatiniform cancer from the peritoneum. The original texture of the peritoneum cannot be discerned: the interior of the abdominal walls, and the whole omentum, were the seat of layers and masses of the morbid growth, consisting of congeries of small cells, variously grouped and intersected, and filled with a transparent semifluid yellowish substance, like thick gum-mucilage, or half-melted jelly. Several quarts of similar substance, discharged from the cells, were removed from the abdominal cavity.

The patient was a woman about forty-five years old. The disease had long existed, and affected nearly every part of the peritoneum. It had been treated as ascites.

Presented by James Paget, Esq.

1124B. A similar specimen from the same patient.

1125. A portion of colon, to the surface of which a layer of lymph, from one quarter to one-half of an inch in thickness, which was deposited on the peritoneum lining the walls of the abdomen, is closely adherent. The substance of the lymph is compact, and on its outer surface it presents the appearance of minute opaque yellowish masses of tuberculous substance thickly scattered in it. *Hunterian.*

1126. "The uterus of a young lady, sixteen years of age, in whom the cavity of the abdomen was filled with coagulable lymph uniting the different parts together. In this preparation the uterus is shown imbedded in that mass" of lymph.—(*Hunterian MS. Catalogue.*) The lymph has exactly the same character as that in the last preparation, and it is most probable that both these and the following were taken from the same patient, though they were placed apart in the original arrangement of the collection.

1127. "A mass of coagulable lymph thrown out in consequence of scrofulous inflammation found covering the intestines, &c."—(*Hunterian MS. Catalogue.*) It is a layer like those in the two preceding preparations, but not presenting the appearance of tubercles; its inner surface was moulded upon the convolutions of the intestines.

1128. A portion of the walls of an abdomen, with a layer of coagulated lymph, a line in thickness, upon the inner surface of the peritoneum. The lymph is firm and compact, and is full of minute tubercles. The blood-vessels have been minutely injected; those in the lymph appear to be most numerous at its two surfaces; none can be traced in the tubercles.

From the Museum of Sir A. P. Cooper.

1129. Two portions of small intestine, from the same patient as the preceding. They are united by a thick layer of lymph, which is deposited over the whole surface of their peritoneal coat, and contains numerous small masses

of tubercle. The vessels of the lymph are minutely injected; it appears highly vascular. *From the Museum of Sir A. P. Cooper.*

1130. A portion of peritoneum, irregularly thickened, and having numerous small masses of tuberculous matter in it. Its surface is rough with adhesions by which it was attached to the abdominal viscera.

From a young man, who died with phthisis and disease of the brain. Signs of peritonitis commenced about six months before the patient's death; they were followed by ascites, but the fluid had been removed, and nearly all the signs of this affection had disappeared, when the brain became diseased.

From the Museum of George Langstaff, Esq.

1131. A portion of peritoneum, with a small oval mass of earthy matter fixed on it. *From the Museum of Sir A. P. Cooper.*

4. *Entozoa in the Peritoneal Cavity.*

1132. A very large bilocular cyst, containing acephalocyst hydatids, from the abdominal cavity. Portions of the stomach and intestines are attached to its external surface, its interior is smooth and polished. Most of the hydatids in it are entire. *Hunterian.*

1133. A similar large cyst, containing hydatids, attached to the outer surface of the colon of the same person. *Hunterian.*

1134. The bladder and rectum, from the same person, together with part of a large hydatid cyst, situated between them on their right side, which, by its pressure, produced retention of urine. The cyst has the same characters as those in the preceding specimens; it has been emptied, and its walls, which are intimately united with the surrounding tissues, are in nearly their whole extent smooth and polished. A large aperture has been formed by ulceration in the fundus of the bladder, but the escape of the

urine was prevented by the formation of a thick layer of lymph beneath the peritoneum, which covered the fundus of the bladder like a cap, and has been partially reflected. *Hunterian.*

The following is an extract from the history of the patient from whom the last three preparations were taken. It is recorded by Dr. John Hunter (by whom the preparations were given to Mr. Hunter) in the "Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge," vol. i., p. 34. London, 1793 :—

"Thomas Bell, aged forty-six years, a carpenter, and a stout man, died suddenly, March the 17th, 1786. . . . He had been complaining for four or five weeks of more or less pain and difficulty in making water, which he himself supposed to proceed from gravel, but by those about him was suspected to arise from some venereal complaint. . . . When questioned by a surgeon respecting his difficulty of making water, he said, that he had been in much pain, but was now easier, and that some urine had come away involuntarily. He was able to sit up in bed at this time, but in an hour after, in attempting to turn himself, he expired.

"The body was examined thirty hours after death.

"The brain was in all respects natural; it was not firm, however, for so short a time after death. The water in the ventricles was in the usual quantity. The blood in the vessels was fluid, both in the head and other parts of the body.

"The thoracic viscera were all sound.

"The abdomen was very tumid, in consequence of the immense size of the bladder, which reached fully eight inches above the pubes; its fundus being within two inches of the arch of the colon. Upon letting out the urine, which amounted to five or six pints, it appeared that there was a large tumour between the neck of the bladder and the rectum, which completely filled the pelvis, and thrust the bladder forwards and upwards. On cutting into the tumour much water rushed out, and along with it many hydatids of various sizes, the largest about an inch and a half in diameter, and the smallest not larger than a pin's head. The tumour was entirely filled with hydatids and the water that surrounded them, and both together they were more in quantity than a pint and a half. There were besides two or three smaller tumours near the neck of the bladder, also containing hydatids; and there were two bodies, not larger than common beans, adhering to the bladder, and containing a soft cheese-like substance.

"Between the stomach and the spleen, and over one end of the pancreas, there was a large tumour [preserved in No. 1488], to which the three above parts adhered, the stomach and pancreas slightly by cellular membrane, the spleen more intimately, so as to make a part of the tumour: with the spleen it was about ten inches in diameter. It was irregularly shaped, and made up of several smaller tumours. There was considerable variety in the contents of those tumours; in one there were hydatids of various sizes, like those mentioned above; in another there was a substance like isinglass, a little softened in water; in a third there was clear water in a considerable quantity, with very minute particles like small grains adhering slightly to the sides; and in a

fourth there were hydatids, some full, others burst, and with their coats compressed together, and forming the isinglass-like substance. The tumours or sacs had all thick coats, endowed with a strong contractile power, that forcibly protruded their contents through any opening made into them. They had two coats, an outer, which was strongest and thickest, and an inner, which was tender, soft, and pulpy.

“ As to the structure of the hydatids, it was the same in large and small; a transparent bag, uniformly round and smooth, filled with clear water. The bag appeared to consist of two coats or layers; for, on handling them, the outer coat would get rumpled, and occasion a degree of opacity, but, by wiping the hydatid, it became again clear and transparent. They appeared to be completely spherical, except that the large ones were a little flattened by their own weight when laid on a plate. They adhered nowhere to the sides of the sac, nor to one another. When they were opened, their coats possessed a strong contractile force, so as to roll themselves up in part. On examining a number of hydatids, some of them appeared of an amber colour, and with thicker coats than the rest; and when opened, their inner surface was found covered with small hydatids, which were not so large as the heads of pins, and looked like minute pearls or studs set in the inner coat.

“ Some of the water containing the small grains mentioned above was examined with a microscope, and found to have floating in it numerous minute hydatids; of which the largest were the little grains visible to the naked eye, and $\frac{1}{16}$ th part of an inch in diameter; the smallest were less than a red globule of blood; and they were of all intermediate sizes. The coats of the largest were a little rough, with numerous filaments, or villi; and on using a deeper magnifier, they had somewhat of a mulberry appearance.

“ When the young ones growing in the coats of the larger were examined with the microscope, they were found not to be set in the coats like pearls, but to be covered by a thin transparent membrane, so as to lie between two layers. It is not improbable that the small globules attach themselves by the villi to the side of the hydatid, and to each other, and thereby give the appearance of being covered by a thin membrane. However that may be, the globules being found of various sizes floating in the liquor, seems to prove that they are originally formed there, and not in the coats of the hydatid, upon which they are afterwards deposited. The number of those that had young ones in them was few in proportion to the others.”

1135. A *Cysticercus* (probably *C. tenuicollis*) from the omentum of a giddy sheep. *Hunterian.*

1136. A portion of omentum, with a collapsed hydatid cyst between its layers. *Hunterian.*

1137. A thin walled spherical membranous sac, containing an hydatid cyst, collapsed and beset on its inner surface with minute opaque white granules,

which probably consist of groups of Echinococci. A portion of omentum is attached to the outer surface of the cyst. *Hunterian.*

1138. Several globular cysts, attached by long slender pedicles to the mesentery of a sheep. They are formed of a tough thin membrane; and one of them, which is laid open, is filled with the membranes of hydatids.

Hunterian.

Specimens of Diseases in the Peritoneum in other parts of the Museum:—

Peritonitis and its effects, 72-3-9, 81-2?, 93-4-8-9, 101, 1152-3, and many of the specimens of Hernia.

Tumours, 194-5, 225, 268, 289, 295-6, 308 to 315; and, as affected by contiguity or extension, the specimens of Cancer and Tubercle of the Stomach and Intestines.

SERIES XXII.—INJURIES AND DISEASES OF THE STOMACH.

1. *Digestion after Death.*

1139. The stomach of an hyæna inverted. The walls of its cul-de-sac and right half are reduced to a pale, transparent, flocculent, gelatinous-looking substance, and in some parts are completely destroyed by the action of the gastric fluid after death.

From the Museum of George Langstaff, Esq.

For other specimens of digestion of the stomach see the Physiological Series, Nos. 591 to 594A; and for Mr. Hunter's account of the process, see the Catalogue of the Physiological Series, vol. i., p. 181.

2. *Foreign Bodies from the Stomach.*

1140. The remains of a knife which was swallowed two months before the death of the patient.

The following is taken from a pamphlet, entitled "A statement of the case of William Dempster, a juggler, who died in consequence of having swallowed a table-knife. By John Hadfield, Middlewich."

" William Dempster, a juggler, when at Carlisle, about the middle of November, 1823, as he was attempting some tricks in a public house, for the amusement of the persons present, accidentally swallowed a table-knife, having a bone handle, the end of which went down first into the stomach. He left Carlisle about the 28th of December, and travelled in a stage-coach to Manchester, came by a boat to Middlewich in Cheshire, and died there on the 16th of January, three days after his arrival.

" I did not see Dempster until he was in a dying state, his death occurring in the course of two hours afterwards, but he gave a tolerably distinct account of the manner in which the accident occurred, and of his journey from Carlisle. He said, 'Having offered for a small sum of money to swallow a table-knife, a new one was accordingly bought from a neighbouring shop. The method, by which I pretended to swallow it, was, to pass the handle and part of the blade down my throat, and hold the point of the knife fast with my teeth. When I was on the point of drawing it out again, some person coming unexpectedly behind me, gave me a smart stroke on the back, the surprise of which caused me to loose hold of the point, and immediately the whole knife slipped into the stomach. I directly made very violent efforts to throw it up, but all in vain; and the endeavours of the surgeons were equally useless to get it up with an instrument.' "

After death the knife was found resting on the great arch of the stomach. In the recent state it is said that the stomach showed marks of violent inflammation. These were not discernible when the stomach was received; it was very large, but its coats were entire, firm, and of their ordinary thickness; they appeared to have undergone no change of structure. The knife and handle measure eight inches in length. The horn of the handle has been completely dissolved, the rivets have fallen out, and about one-third of the edges and point of the blade is destroyed; the remaining iron is rough, and covered with rust.

Some further particulars of the case are given in "An Account of William Dempster, who swallowed a table-knife nine inches long," by Thomas Barnes, M.D., M.R.C.S.L., in the "Edinburgh Philosophical Journal," vol. ii., p. 319, 1824. It is said,—“Immediately after the accident he became dreadfully alarmed, was in great mental agony, and apprehended instantaneous death.” Attempts were made repeatedly with the fingers, and with forceps, to extract the knife, but in vain. His mind continued much depressed, though he had very little pain or uneasiness. Next day he complained of occasional pain in his stomach, and afterwards of pain in the left shoulder shooting across the chest to the stomach. He was twice bled. “A hard substance, which was believed to be the handle of the knife, could be felt very distinctly by pressing the fingers very gently on the umbilicus: slight pressure gave him considerable pain. Although his sufferings were much less than could have been expected, his health became gradually impaired, and his strength reduced. He was able to walk about a little in the day, and could sleep in the night on his back, but could not lie on either side.

“He took some dilute sulphuric acid for two or three weeks, which was discontinued, as he thought it increased the pain in his stomach.* His bowels were kept open by

castor oil and injections; the alvine evacuations were of a dark ferruginous colour, which probably arose from the decomposition of the knife; the pulse was very little affected, being generally between 70 and 80 in a minute. His diet consisted of soup, gruel and tea, taken in small quantities. When the stomach was empty the handle of the knife could be distinctly felt, extending from above downwards, by placing the hand very lightly on the abdomen, a little above the umbilicus, but a single cup of tea, or a little food of any kind, distended the stomach so much that it entirely disappeared.

“ He was frequently squeamish and sick at his stomach, and sometimes felt a severe twisting pain in that organ.

“ The patient remained in the Carlisle Dispensary till the 28th of December, when, against the wish of the surgeons, he left, and was on his journey homewards when he died at Middlewich.”

1141. The blades and other iron or steel portions of three or more clasp-knives, which were swallowed by a soldier, and voided, *per anum*, at St. George's Hospital. Their surfaces and edges are rather deeply corroded.

The man recovered.

Presented by Sir Everard Home.

3. *Effects of Poisons.*

1142. Portion of the stomach of a person who was poisoned with sulphuric acid. Its mucous membrane is pale, brown, and greyish; but it is smooth, and does not appear altered in its texture. Mucus is closely adherent in a thin layer to a part of its surface; the other part has been cleaned.

From the Museum of George Langstaff, Esq.

1143. Portion of the stomach of a person who took hydrochloric acid. Its mucous membrane is of a deep brown colour, mixed with shades of grey and black, contracted and flocculent; small portions of it appear to have been destroyed. The peritoneal coat is uninjured, but both it, and the cellular tissue between it and the mucous coat, appear hardened and contracted.

Presented by J. Quekett, Esq.

The patient was a man of industrious habits, about forty years old. He took the poison about fifteen hours before his death, being at the time in sufficiently good health

to pursue his trade of wadding-maker. The first signs of illness produced by it were that "he complained to those who worked with him of being unwell, and expressed a wish to go home to lie down . . . On arriving at his house (which was about three-quarters of a mile from the factory at which he worked) he was seen by a female lodger, to whom he told that he had taken poison, and complained greatly of the pain in his throat and stomach; she did not believe him at first, but advised him to go and lie down on the bed, which was in an adjoining room. In proceeding to do so he fell; and, in falling, struck his head against the door-post . . .; he was lifted up, and placed in a chair, when he leant back and said, 'I am a dead man.' After this he recovered a little, and took a cup from a shelf, and went to the water-jar, and, having filled it, drank the contents, and seemed for a little time much easier; but shortly becoming worse . . . he was brought off to this hospital, where he was quickly seen by the apothecary, who administered to him magnesia, milk, and the other remedies employed in such cases, all of which failed to relieve him; he complained more and more of the pain in his throat and stomach, and repeatedly asked for water to drink. From the hour of his arrival, which was about five o'clock in the evening, he lingered on till five on the following morning, when he expired. . . . Shortly before his death he told his wife that he had taken muriatic acid; and this, his friends state, was the name that he gave to it, to all who asked him what he had swallowed."

" Sectio cadaveris, nine hours after death.

" Body muscular and well formed; old pleuritic adhesions on both sides of the chest, and both lungs adherent to the diaphragm. The heart rather larger than natural, and the left ventricle much hypertrophied. The liver of a dark colour, and the gall-bladder greatly distended with bile; it was of a bright yellow colour, except at one spot, about three-fourths of an inch in diameter, where it touched the stomach; at this part it was of a green tint. The stomach itself was also much distended, of a dark lead colour, and its vessels full of black blood; the intestinal canal was of the same leaden hue, and its vessels also much engorged with blood. The peritoneum was much injected, and slight depositions of lymph were found throughout the whole peritoneal coat of the alimentary tube. On removing the stomach and œsophagus, and examining them, it was noticed that from the mucous membrane of the latter the epithelium had been removed, and the mucous membrane itself was also injured. The coats of the stomach were much affected, and in many parts nothing but the peritoneal tunic was left; in taking it out it gave way, and about six ounces of a dirty yellow fluid were collected; this coagulated into a solid mass about ten minutes after its removal. The whole internal surface of this viscus was covered with a thick coating of a yellowish colour, resembling paste, probably caused by the coagulation of the cheesy portion of the milk which was administered, or from other albuminous matters. Underneath this the whole internal surface was stained of a black colour, in some parts more than at others, presenting a charred appearance; this was most marked near the cardiac and pyloric orifices, and near the great cul-de-sac: this blackening extended also through the duodenum, its whole length, especially on the prominent parts of the numerous valvulæ conniventes, the intervals being stained of a greenish yellow colour by bile;

and spots were observed here and there on the jejunum for about a foot and a half from its commencement."—*Extracted from the case reported by Mr. Quekett in the "London Medical Gazette,"* vol. xxv., p. 285, London, November 15, 1839.

1144. The cardiac portion and great end of the stomach of a person who was poisoned with oxalic acid. Its mucous membrane is softened, and variously mottled with black, grey, and ash-colour, from the action of the acid on blood congested in its vessels.

From the Museum of George Langstaff, Esq.

1145. Portion of the stomach of a young woman, who died thirteen hours after taking half an ounce of arsenious acid. The appearance of the stomach shortly after death was thus described by Mr. Hunter:—"The stomach contained about twelve ounces of a greenish fluid, with a curdy substance in it. On the internal surface of the great curvature, near the cardia, a portion of the villous coat, about the size of a crown piece, was partially destroyed, and of a dark red colour, with a regularly defined edge, and some of the arsenic adhering to different parts of its surface. The rest of the stomach was in a sound state."

Of these changes, no trace is now visible, but the injured portion of the mucous membrane is less wrinkled than the rest, and some small shreds are adherent to it.

Hunterian.

The history is in "The case of a young woman who poisoned herself in the first month of pregnancy, by Thos. Ogle, to which is added an account of the appearance after death, by the late J. Hunter," in the "Transactions of the Society for the Improvement of Medical and Chirurgical Knowledge," vol. ii., p. 63.

1146. The stomach of a girl who poisoned herself with arsenic. It is closely contracted, the mucous membrane is very deeply and irregularly corrugated, and traces may be seen of increased vascularity, which in the recent state was general and extreme. Several large and thick masses of hardened mucus are adhering like fibrine to the mucous membrane.

The patient was nineteen years old. The quantity of arsenic swallowed was about half an ounce, and the signs of poisoning were severe.

From the Museum of George Langstaff, Esq.

1147. Portion of the stomach of a girl who was poisoned with half an ounce of powdered colchicum-root. Its mucous membrane was almost uniformly of a deep red colour; and now, though the blood has been altered by the action of the alcohol, presents the characters of intense congestion. In the recent state, also, it appeared softened.

From the Museum of George Langstaff, Esq.

4. *Ulceration of the Stomach.*

- 1147A. A stomach of very small size, measuring only five inches in length, and nearly six inches in its greatest circumference. Its coats are from three to four lines in thickness, and were soft, and easily torn, but with no appearance of a cancerous change of structure. Its mucous membrane is flocculent, and appears uniformly superficially ulcerated.

The patient was a gentleman seventy years old. He had been subject to gout for forty-five years, and was in the habit of treating it with doses of from 100 to 120 drops of colchicum-wine, and from 100 to 200 drops of laudanum, which usually caused stupor for one or two days, and then vomiting. For nine months before his death he abstained from these medicines; but had severe pain in the stomach and intestines, with uncontrollable vomiting. Besides the changes of structure in the stomach, extensive effects of former peritonitis were found, which were probably the consequence of a blow over the region of the stomach received in youth.

Presented by William Baxter, Esq.

1148. Part of the pyloric end of a stomach, from which irregular strips of the mucous membrane have been removed by ulceration. Some parts of the ulcerated surfaces are of a brown colour.

From a child five years old, who died forty hours after being slightly burnt on the back, arms, legs, and epigastrium. Mr. Swan says of the appearances after death:—"On opening the abdomen, every part appeared sound except the stomach, in the villous coat of which were several spots and stripes, like sloughs, extending deep and quite black."

A further account is given in his "Practical Observations," in the "Edinburgh Medical and Surgical Journal," vol. xix., p. 344, 1823.

Presented by Joseph Swan, Esq.

The ulcer has the characters of what has been termed *hemorrhagic erosion*, or *hemorrhagic ulcer*, of the stomach. On the occurrence of *perforating* ulcers of the duodenum as one of the consequences of burns, see a paper "On Acute Ulceration of the Duodenum in Cases of Burns, by T. B. Curling," &c., in the "Medico-Chirurgical Transactions," vol. xxv., p. 260, London, 1842; and the preparation, presented by him, in the next Series, No. 1200. See also No. 1189, in the same Series.

Presented by Joseph Swan, Esq.

1149. Portion of a stomach, in the mucous membrane of which there are numerous minute, oval and round, superficial, smooth-edged ulcers [*Hemorrhagic erosions*, Rokitansky]. In the recent state, the bases of many of them were black with little effusions of blood. The tissue between and beneath the ulcers is healthy.

From a woman who died with malignant disease of the breast and lungs, specimens of which are preserved in Nos. 223-4.

Presented by James Paget, Esq.

1150. Part of the stomach of a porcupine, in which are four ulcers, produced by the irritation of a large bezoar. Two of them are more than an inch in diameter, and the ulceration extending through the base of one of these has perforated all the coats. The bases of the other ulcers are smooth, and thickly covered with pieces of lymph or mucus. *Hunterian.*

1151. Portion of the pyloric part of the same stomach, exhibiting a small superficial ulcer similar to those in the preceding preparation.

Hunterian.

1152. Portion of the stomach of a girl seventeen years old, in which a circular perforating ulcer, one third of an inch in diameter, extends with a slight obliquity through all the coats, just in front of the gastro-hepatic omentum, and about two inches from the cardia. The edges of the ulcer are smooth and abrupt, and the orifice in the peritoneum, which is rather smaller than that in the mucous membrane, has an exactly defined sharp border. The immediately adjacent part of the mucous membrane is condensed and smooth; the rest appears healthy. *Hunterian.*

The preparation is figured in Baillie's "Morbid Anatomy," Fasc. iii., pl. v., f. 2. It presents a characteristic example of the *simple chronic ulcer of the stomach* of Cruveilhier,—the *perforating ulcer of the stomach* of Rokitansky.

The following is, most probably, the history of the patient:—

"A young lady about fifteen years of age, and remarkably healthy until the preceding summer, when she occasionally complained of a pain at her stomach, but so trifling that her family, imputing it to her particular time of life, paid little attention to it, was, in the beginning of March last, after having supped in a very moderate manner, taken ill at going to bed with violent pain at the stomach, sickness, and vomiting, which symptoms continued great part of the night. Next morning, between eleven and twelve o'clock, I found her, though still in bed, cheerful, and neither complaining of sickness nor of pain; but her pulse was extremely quick, with considerable tension and tenderness of the præcordia and abdomen, which showed that her illness was of a more serious nature than her relations apprehended, and determined me to call again in the evening. I ordered for the present an emollient glyster, the præcordia and abdomen to be fomented, and a camphorated saline draught, with the addition of about twenty grains of an absorbent powder, and three or four drops of the tinct. opii, to be given every four hours. But this, and everything else she took, was immediately thrown up; yet she passed the day tolerably well, expressed great relief from the fomentation, and in the evening was in good spirits, until about nine o'clock, when she became suddenly restless, and with uncommon eagerness and anxiety desired to be raised up in bed, spoke in a strong voice to one of her sisters who was assisting her, and instantly fell back, without sense, motion, or the least appearance of life. I came into the room a few minutes after the accident, and at first was persuaded that she had only fainted, but upon approaching the body I was soon undeceived, and found that she was actually dead.

"So sudden and so unexpected a death made me extremely desirous of ascertaining the cause; and the family, being equally anxious, readily consented to have the body opened, which was accordingly done two days afterwards by Messrs. Home and Bell, gentlemen of known anatomical accuracy and experience.

"The abdomen contained two or three quarts of a turbid fluid, and the intestines everywhere had the appearance of having suffered a high degree of peritoneal inflammation; but the cause of her sudden death still remained undiscovered, until, the stomach being brought forward, I perceived on its anterior part, nearly towards the cardia, a round opening sufficient to have admitted a common-sized quill, and which, upon examining this organ more particularly, appeared evidently the effect of an internal ulcer that had destroyed all the coats of the stomach but the peritoneal, which last had probably burst or given way during the action of vomiting. The ulcer was round, about the size of a sixpence, and with hard or callous edges, a proof that it had been of some standing; the coats of the stomach at this part were also considerably thickened, though everywhere else they had a natural appearance.

"We likewise observed a number of diseased lymphatic glands in the duplicature of

the peritoneum, where that membrane passes off from the smaller or superior curvature of the stomach to the pancreas."

"Three instances of Sudden Death, with the appearance on Dissection," by James Carmichael Smyth, M.D., in the "Medical Communications." 8vo. London, 1790. Vol. ii., p. 466.

1153. Portion of the stomach of a lady twenty-two years old, in which an oval ulcer, of the same kind as that last described, has perforated all the coats. The aperture is much larger in the interior than on the exterior of the stomach. Its internal and extreme border is formed by the smooth margin of the ulcerated mucous membrane. Within this border, and lying deeper in the ulcer, is an abrupt edge, formed by the muscular coat, ulcerated in the same form, but to a less extent; and from this edge the ulceration proceeds with a slight and graduated shelving of its margin through the peritoneal coat, the aperture in which is exactly defined and sharp. Coagulated lymph is effused in a thin layer upon the external surface around the ulcer. *Hunterian.*

1154. Portion of the œsophagus of the patient from whom the stomach last described was taken. Its mucous membrane appears darker than usual; it is otherwise healthy. *Hunterian.*

1155. Portion of the stomach of a nobleman, in which, close to the pylorus, there is a small oval perforating ulcer, with smooth abrupt edges, through which the contents of the stomach were effused into the peritoneal cavity. Near this ulcer, and directly over the pylorus, is a smaller ulcer of the same kind, which has destroyed only the mucous membrane. The adjacent tissues appear condensed and contracted towards the ulcer; the pylorus also is much contracted. *Hunterian.*

1156. Portion of the posterior wall of a stomach, in which there is a large irregularly bordered perforating ulcer. The outline of the ulcer is irregular, as if it were formed by the coalition of two or more oval ulcers. At its extreme circumference it has destroyed only the mucous membrane. Just within its outer edge, which is smoothly rounded, but abrupt, some of the

muscular fibres are seen terminating abruptly at the margins of the deeper part of its base, which, to the edge of the perforation, is formed of the condensed peritoneal and subserous tissues. The edges of the perforation are thin and sharp. Behind the ulcer the stomach adheres closely to the pancreas.

Hunterian.

1157. Portion of a stomach, in the mucous membrane of which, below the lesser curvature, there are two nearly oval ulcers, each about half an inch in diameter. They have smooth sharp edges, like the preceding, and obscurely granulated bases, on which, in one of them, the open orifice of a small blood-vessel appears. The adjacent mucous membrane is healthy.

Hunterian.

1158. Portion of a stomach, in which an ulcer extended through the mucous membrane into a large vein, opening it in two places, and giving rise to fatal hemorrhage. The vein has been injected, and is unnaturally large and varicose.

Hunterian.

5. *Tumours and other allied Morbid Affections in or involving the Stomach.*

1159. A longitudinal section of the stomach of a cod-fish (*Gadus Morrhua*), and of a large tumour attached to it. The tumour is of a somewhat oval form, and measures about nine inches, and five inches in its two chief diameters: it appears to have grown between the coats of the stomach, for the outer coat may be traced for a short distance over its surface. The greater part of it is composed of a very dense and compact semi-transparent substance, traversed by fine bundles of white shining fibres, which are variously arranged, but chiefly radiate from the part at which the tumour is attached to the mucous membrane of the stomach. The exterior of the tumour is formed of a thick layer of pale fibrous tissue enveloping that just described; and in its centre is a large irregular cavity, formed, apparently, by ulceration or softening of its substance.

The mucous membrane and the other adjacent parts of the stomach appear healthy. *Hunterian.*

1160. Part of a stomach, which is much reduced in size, and of which the walls are in every part about half an inch thick. The greater part of the increase of thickness is in the situation of the submucous tissue, in the place of which is a layer of hard and dense, opaque-white, cancerous substance, from one-quarter to one-half of an inch in thickness, intimately united with the mucous membrane, which presents an entire but coarsely granulated and knotted internal surface. External to this hard white layer is one, from two to four lines thick, (its varying thickness in different parts corresponding with that of the healthy muscular coat,) which consists of a firm, grey, semitransparent substance, traversed by vertical, fibrous bands like partitions. These bands appear to proceed from the white cancerous submucous substance, and pass, variously branching and uniting with one another, through the semitransparent layer to the peritoneal coat, which is thickened and hard. *From the Museum of John Taunton, Esq.*

1161. A similar specimen, exhibiting the same disease less advanced in its degree. The mucous membrane over the seat of disease is smooth and unwrinkled, except at the pylorus itself. *Hunterian.*

1162. A stomach, greatly enlarged, of which the walls in every part, except the cul-de-sac, are increased to a thickness of from half an inch to nearly an inch. The chief increase is due to the formation of a firm, but not hard, opaque-white, probably cancerous substance, of very close, but apparently filamentous, texture beneath the mucous membrane. This substance is formed in an irregular layer, raising the mucous membrane in uneven swellings, from one-quarter to one-half of an inch in depth. The mucous membrane itself appears swollen, œdematous, spongy, and villous. External to the morbid substance is a layer, about two lines thick, of dense, grey, semitransparent tissue, traversed by fibres like that described in the last specimen but one. In the middle of the posterior wall of the stomach is an oval ulcer, three-quarters of an inch in its longest diameter,

with a sharp abrupt margin, and a smooth base, formed of the submucous tissue. Near the pylorus is an appearance of more diffuse ulceration. The peritoneum covering the diseased part of the stomach is healthy, very tense, and thin. Some enlarged lymphatic glands are attached to the great arch of the stomach.

From a man twenty-three years old, who was in good health six months before his death.

Presented by William Lawrence, Esq.

1163. The pyloric portion of a stomach, with part of the duodenum. The submucous tissue for about four inches above the pylorus is occupied by a thin flat mass of hard, white, obscurely fibrous, cancerous substance, on the outer surface of which, and extending through a large area, is a layer half an inch thick, formed of dense, grey, semitransparent substance, vertically striated like the preceding specimens. The mucous membrane is closely adherent to the morbid substance beneath it, and its inner surface is at this part smooth; in other parts its inner surface is deeply wrinkled. To the outer surface of the diseased portion of the stomach, the omentum and some condensed cellular tissue with lymphatic glands, are intimately adherent. *Hunterian.*

1164. The pyloric portion of a stomach, with the commencement of the duodenum. An elongated narrow ulcer, with slightly elevated edges formed of swollen mucous membrane, extends half round the stomach immediately before the pylorus. The tissues subjacent to the ulcer are thickened and hard, as if occupied by such cancerous disease as is shown in the preceding specimens. The margins of the pylorus (in which a quill fits closely) are swollen, and its aperture is contracted. The muscular coat of the rest of the stomach is hypertrophied.

Presented by Sir Everard Home.

1165. The pyloric portion of a stomach, with part of the duodenum. Immediately above the pylorus there is disease like that last described, but of less extent, in the situation of the submucous and muscular coats. Over the middle of this diseased part the mucous membrane appears

hard, closely united to the morbid substance, and smooth: but around, it is raised in a ring-shaped, flat tumour, with a spongy, radiating, fibrous texture, like many of the tumours shown in the following preparations. The coats of the stomach above the diseased part are hypertrophied.

Hunterian.

1166. A stomach of which the blood-vessels have been minutely injected. Around the cardiac orifice, and extending for a short distance along the lower curvature, is a flat, sponge-like tumour, (probably either an epithelial or a medullary cancer,) of moderately firm consistence, having an uneven surface projecting into the cavity of the stomach, and a deeply sinuous elevated margin. The lymphatic glands immediately adjacent to the tumour are enlarged, and contain a soft pulpy substance. The coats of the stomach on which the tumour rests, and immediately adjacent to it, appear healthy. The middle of the stomach presents a very close hour-glass muscular contraction.

From the Museum of John Howship, Esq.

1167. The cardiac portion of a stomach, with part of the œsophagus. Immediately below and around the cardiac orifice is a thick ring of spongy cancerous substance (very like that last described), over the greater part of which the mucous membrane is roughly ulcerated. The œsophagus is dilated, and its muscular coat is very much hypertrophied.

Hunterian.

1168. The pyloric part of a stomach, with the first portion of the duodenum. At the pylorus, and for nearly two inches above it, the walls of the stomach are occupied by a soft, spongy, cancerous tumour, apparently composed, for the most part, of loosely connected fibres, and projecting in irregular masses into the cavity, as well as on the exterior, of the stomach. Many blood-vessels, the orifices of which are seen on the cut surface of the tumour, traverse the central and firmer parts of its substance. The wall of the stomach immediately above the tumour is thickened by the formation, between its peritoneal and mucous coats, of a firm, greyish, glistening substance traversed by branching white fibres. Just above the

pylorus the wall is perforated by a ragged ulcer, which was closed by an adherent portion of the anterior part of the liver. *Hunterian.*

1169. The pyloric portion of a stomach, with the commencement of the duodenum. Above the pylorus, the cavity of the stomach is nearly filled with an irregular, lobed, and fissured mass of soft sponge-like substance, like medullary cancer, parts of which are deeply ulcerated. The adjacent walls are thickened, like those in the preceding specimen. The blood-vessels of the stomach are at the same part dilated, and present wide circular orifices on the surface of the section. The lymphatic glands are enlarged, and closely adherent to the exterior of the pylorus.

Hunterian.

1170. An œsophagus, with the cardiac portion of the stomach, both affected with ulcerated cancer, probably of the same kind as that shown in the two preceding specimens. The whole circumference of the œsophagus, for nearly four inches below the bifurcation of the trachea, is occupied by an irregular ulcer, with a coarsely shaggy surface. At its upper part the base of this ulcer is traversed by several bands of the thickened circular muscular fibres of the œsophagus, and in a few situations the longitudinal fibres are exposed. The margins of the ulcer are in some parts thin and undermined, as if by sloughing; but in a few places they present spongy elevations, like portions of the sinuous margins of the preceding flat soft cancerous tumours. Parts of the arch of the aorta, and of one of the bronchi, are firmly adherent to the exterior of the œsophagus near the ulcer. The trunks of the pneumogastric nerves are imbedded in the thickened tissue: the left nerve was ulcerated through, just after giving off the branches to the pulmonary plexus. Through its whole length the œsophagus is considerably dilated, and its muscular coat is very thick.

The ulcer in the stomach is situated just below the cardiac orifice; the orifice itself and the portion of the œsophagus directly above it being healthy. The ulcer is round, with an elevated sinuous margin, covered with swollen, smooth, mucous membrane; it is about three inches in diameter; and all the central part of its surface is rough, fibrous, and

flocculent, like that of the ulcer in the œsophagus. Part of the left lobe of the liver is closely adherent to the exterior of the cardiac portion of the stomach.

The patient was a man about fifty years old.

Presented by Joseph Swan, Esq.

1171. Portion of a stomach, around the cardiac orifice of which there is a large ulcer like that last described. Its base is formed of a soft spongy substance, its margins of long coarse shreds and flocculi, which hang loose in the cavity of the stomach.

Presented by Sir Everard Home.

1172. Portion of a stomach, in which the walls in a circular space of about three inches in diameter are wholly destroyed by ulceration. The aperture is partly filled with loose and nearly detached portions of a soft flocculent substance. Around it, the traces of the extreme boundary of the ulceration are discernible in a slightly elevated sinuous line. Adjacent to this ulcer is another about an inch in diameter, but irregular in its form, which has destroyed the mucous membrane, and has an uneven flocculent base.

Presented by William Norris, Esq.

1173. Portion of a stomach, in which there is a large cancerous ulcer. The margin of the ulcer is deeply sinuous, hard, and elevated; it has destroyed the mucous membrane, and the tissues beneath it, so that at one part the walls are nearly perforated. The base of the ulcer is nearly level and smooth, and its characters are such as indicate the probability that a process of healing had been established after the ulceration or sloughing of the centre of such a flat cancerous growth as is shown in some of the preceding specimens, as Nos. 1165-6-7. The adjacent parts of the wall of the stomach are thickened, but the surface of its mucous membrane appears healthy.

Hunterian.

1174. The cardiac half of a stomach, with part of the œsophagus, from a woman fifty years of age. The cavity of the stomach, just below the

cardiac orifice, is much contracted by the growth of several masses of a moderately firm cancerous substance within the cellular tissue between its coats. Some of these are exposed by the ulceration of the mucous membrane over them, and others project upon the peritoneal surface. In consequence of the constriction of the stomach opposite the cardia, the left or blind end appears like a small round sac, communicating with the larger cavity of the stomach by a circular orifice about an inch in diameter. The mucous membrane of the œsophagus is thickened, and its surface is coarsely granulated; the muscular coat is hypertrophied.

There were tumours of a similar kind, but softer, in the liver and omentum. Signs of organic gastric disease had existed during the last three years of life.

From the Museum of George Langstaff, Esq.

1175. The pyloric portion of a stomach, with part of the duodenum. The walls of the stomach are increased to more than half an inch in thickness by alveolar cancer. Within the coats is an accumulation of a transparent jelly-like substance, of which some is contained in distinct spherical cells, and the rest appears generally diffused through the tissues; so that the section made through the walls of the stomach looks like the surface of a mass of jelly traversed by fine white fibres. The interior of the stomach is covered with long flocculi, and cells containing the jelly-like substance are thickly scattered immediately beneath its surface. Such cells exist also in equal abundance beneath the peritoneal coat, which is elevated by them into an irregularly nodulated surface.

From a lady of middle age, who died extremely emaciated, after long suffering with gastric affection. The heart is preserved in No. 1531.

From the Museum of George Langstaff, Esq.

Specimens of Diseases of the Stomach in other parts of the Museum:—

Effects of foreign bodies, 62 to 66.

Cancer, 239, 266-7.

SERIES XXIII.—INJURIES AND DISEASES OF THE INTESTINES.

THE arrangement of the specimens in this Series is, in all principal respects, in accordance with the general plan of the Catalogue: but an Appendix is added to the Series, (including the preparations from No. 1234 to No. 1252,) in which are placed the specimens of peculiar diseases affecting certain portions or particular organs of the intestinal canal, such as the Peyer's glands and ileo-cæcal valve. The diseases of the Rectum and Anus, also, are displayed in a separate series; and other series are formed of the specimens of Herniæ and Displacements of portions of the intestines, and of some of the consequences of such displacements.

1. *Simple Stricture of the Intestinal Canal.*

1176. Parts of a stomach and duodenum. Immediately adjacent to the pylorus the canal of the duodenum is reduced to one-fourth of an inch in diameter, by contraction with slight thickening of its walls. The stricture is half an inch in length. Behind it, the pylorus and stomach are dilated, and their muscular coats are hypertrophied; beyond it, the duodenum enlarges at once to its ordinary size. The mucous membrane of both the stomach and the duodenum is healthy.

From the Museum of George Langstaff, Esq.

2. *Dilatation of the Intestinal Canal.*

1177. A portion of ileum, in which there are, in two places, partial dilatations of the mucous and peritoneal coats, forming large sacculi, or *false diverticula*. The dilatations are situated close to the attachment of the mesentery; one of them is nearly hemispherical, the other superficially lobed. They appear to have been produced by a kind of hernial distension and protrusion.

sion of the mucous membrane through the muscular and beneath the peritoneal coat. There were several other dilatations of the same kind on the small intestine, and the whole canal was much distended with air.

From the Museum of George Langstaff, Esq.

3. *Injuries of the Intestinal Canal by Violence.*

1178. A portion of jejunum, in which are four apertures made by a bullet twenty-four hours before death. Coagulated lymph is deposited in thin films upon the peritoneum around the wounds. *Hunterian.*
1179. Another portion of the same jejunum. The edges of one of the apertures made by the bullet are thickened and everted, and there is coagulated lymph upon them and the surrounding peritoneum.

Mr. Hunter adduces these parts in proof that adhesions may form very quickly around gun-shot wounds of the intestines. He says, "On Thursday morning, the 4th of September, 1783, about seven o'clock, an officer fought a duel in the Ring in Hyde Park, in which he exchanged three shots with his antagonist, whose last shot struck him on the right side, just below the last rib, and appeared under the skin on the opposite side, exactly in the corresponding place, and was immediately cut out by Mr. Grant.

"About three hours after receiving this wound I saw him with Mr. Grant. He was pretty quiet, not in much pain, rather low, pulse not quick nor full, and a sleepy languidness in the eye, which made me suspect something more than a common wound. He then had neither had a stool nor made water, and therefore it could not be said what viscera might be wounded.

"During all the day he had frequent vomiting, and tension of the abdomen; but he had no stool, although two clysters were given. He died at seven o'clock the following morning, about twenty-four hours after receiving the wound.

"He was opened next day at ten o'clock, twenty-seven hours after death, when we found the body considerably putrid, although the weather was cold for the season, the blood having transuded all over the face, neck, shoulders, and breast, with a bloody fluid coming out of his mouth, with an offensive smell; below this the body was not so far gone.

"In opening the abdomen a good deal of putrid air rushed out; then we observed a good deal of fluid blood, principally on each side of the abdomen, with some coagulum upon the intestines; when sponged up it might be about a quart. The small intestines were slightly inflamed in many places, and these adhered.

" On searching for the course of the ball we found that it had passed directly in, pierced the peritoneum, entered again the peritoneum where it attaches the colon to the loins, passed behind the ascending colon, and just appeared at the right side of the root of the mesentery where the colon is attached; passed behind the root of the mesentery, and entered the lower turn of the duodenum as it crosses the spine; then passed out of that gut on the left of the mesentery, and in its course to the left side it went through the jejunum about a foot from its beginning; then through between two folds of the lower part of the jejunum, taking a piece out of each; then passed before the descending part of the colon, and pierced the peritoneum of the left side, as also some of the muscles, but not the skin, and was immediately cut out exactly in the same place on the left where it entered on the right; so it must have passed perfectly in a horizontal direction.

" There was no appearance of extravasation of any of the contents of the intestines loose in the cavity of the abdomen. The intestines, in many places, were adhering to one another, especially near to the wounds, which adhesions were recent, and, of course, very slight; yet they showed a ready disposition for union to prevent the secondary symptoms or what may be called the consequent, which would also have proved fatal.

" There was little or no fluid in the small intestines, but there was a good deal of substance, in consistence like fæces, in broken pieces about the size of a nut, through the whole track of the intestine, even in the stomach, which he vomited up; but in the upper end of the jejunum, as also in the duodenum, there was some fluid mixed with the other; but that fluid seemed to be rather bile. If this solid part was excrement, then the valve of the colon must not have done its duty. Was all the thin part absorbed to hinder extravasation into the belly? or was it all brought back into the stomach to be vomited up? There was a good deal of air in the ascending, but more especially in the transverse, turn of the colon.

" This case admits of several observations and queries. First, the lowness and gradual sinking, with the vomiting without blood, bespoke wounded intestines, and those pretty high up. It shows how ready Nature is to secure all unnatural passages, according to the necessity.

" Query, what could be the cause of his having no stool, even from the clyster? Were the intestines inclinable to be quiet under such circumstances? Would he not have lived if the immediate mischief had not been too much? I think that if the immediate cause of death had not been so violent, Nature would have secured the parts from the secondary, viz. the extravasation of the fæces.

" What is the best practice where it is supposed an intestine may be wounded? I should suppose the very best practice would be to be quiet, and do nothing, except bleeding, which in cases of wounded intestines is seldom necessary."—*Hunter: On the Blood, &c.; Works*, vol. iii., p. 561-4.

1180. A portion of jejunum, the coats of which were ruptured by a blow. The aperture is transverse and oval, measuring about a quarter of an inch in its greatest diameter. The edges of the ruptured mucous membrane are

protruded through the aperture in the peritoneal coat, and everted, so as to form a deep border round its margin, by which the apparent extent of the aperture is considerably lessened. The adjacent peritoneal coat is thinly covered by lymph.

From a man seventy years old, who was kicked by a horse just above the umbilicus twenty-one hours before death. After death there was found "a large quantity of bloody serum in the abdomen, but very little feculent matter had escaped." On two other portions of the intestine there were small ecchymoses.

The case is described by Mr. Swan in the "Edinburgh Medical and Surgical Journal," vol. xxii., p. 93, July, 1824.

Presented by Joseph Swan, Esq.

1181. A portion of small intestine which was pulled through a rent in the vagina.

The patient was a woman twenty-three years old. When pregnant with her seventh child, in the third or fourth month of gestation, symptoms threatening miscarriage occurred. A person called in to attend her passed his hand through the upper wall of the vagina, and pulled out nineteen and a half feet of small intestine, tearing it from the mesentery, and nearly detaching it from the rest of the canal. The patient survived the injury seventeen days. The case is further described in the *Lancet*, August 24, 1844, p. 678.

Presented by Henry Mitchell, Esq.

4. *Foreign Bodies in, or removed from, the Intestinal Canal.*

1182. Portion of ileum, in which a biliary calculus, of regular oval form, measuring two inches in length, and an inch and a quarter in thickness, and weighing four hundred grains, is firmly impacted.

The patient was a woman fifty-two years old. She had long suffered under signs of biliary calculi, and died exhausted. After death the gall-bladder was found thickened and contracted; and both it and the liver were intimately adherent to the duodenum and other adjacent organs. There was a large ulcerated opening of communication between the gall-bladder and duodenum, through which this calculus had passed. The intestine above the part in which it was impacted was distended with air and bilious fluid.

From the Museum of John Howship, Esq.

1183. Portion of the colon of a horse, which has several small brown calculi imbedded in ulcerated(?) cavities in its mucous membrane.

Hunterian.

1184. The end of an ileum, with the cæcum, and a dessert-spoon which became fixed in the latter. The spoon is seven inches long, and its bowl measures one inch and a half across. Its surface is nearly all blackened, but its form is not changed. The mucous membrane of the cæcum and colon is in many places in a state of ragged ulceration, but in the intervening spaces is unaltered; and all the other tissues of the intestine appear healthy.

The patient was a lunatic, twenty-two years old, who, after making two ineffectual attempts at suicide, forced this spoon down his throat in the absence of his keeper. No immediate ill effects followed, and it was not till he had in a great measure recovered from his insanity, and confessed what he had done, that the fate of the missing spoon was suspected. After this, however, his digestive organs began to be much disordered, his health declined, he often complained of an acute pain in the region of the cæcum, and his evacuations were sometimes mixed with pus and blood. He underwent various treatment; for his account of having swallowed a spoon was supposed by his medical attendants to be ascribed to a disordered imagination. At length signs of disease of the liver, with ascites and dyspnœa, ensued. He was tapped, and when the fluid was evacuated Mr. Langstaff distinctly felt a solid substance through the emaciated walls of the abdomen. A month afterwards he died. For a short time previous to his death his urine and fæces were passed involuntarily.

The case is published at greater length in "The Catalogue of the Preparations constituting the Anatomical Museum of George Langstaff," London, 1842, 8vo., p. 228. It includes the following letter, found after the patient's death:—

" To my dear Mother.

" In the event of my death, let me be opened soon after by medical men, any you may wish, but I wish Mr. Langstaff to be present, and, if he pleases, to operate.

" The spoon will be found in my intestines. I have given it to my mother, but she is at liberty to dispose of it in any way, or to whom, she may think proper: if the possession of it is desirable to any of the faculty for the public good, scruple not to communicate it, or publish any of the facts or circumstances relative to the above matter, if the knowledge of them will benefit the community.

" I forced the spoon down my throat with my right hand, immediately after dinner, while in my room at Mr. Terry's, of Sutton Coldfield, about the beginning of October, 1827, and remember the detail of the whole affair. Let there be two members of my immediate family present during the work of dissection."

From the Museum of George Langstaff, Esq.

1185. A cæcum, with part of the ascending colon, in which numerous ulcers, of various sizes and shapes, have destroyed portions of the mucous membrane, and burrowed more widely under it, leaving strips and islands of it unaffected. The other coats of the intestine are thickened and indurated, and there are numerous enlarged lymphatic glands in the adjacent part of the mesocolon.

The patient, a boy twelve years old, had suffered for sixteen months before death with severe pain in the abdomen, especially in its right side. At first it used to occur about once a-week, coming on suddenly when he appeared in good health, and occasioning by its severity nausea and sometimes vomiting. Gradually, however, the attacks of pain grew more frequent; and at length it became constant, and vomiting almost always followed the taking of food. Three months before death the abdomen was much enlarged and irregularly hard; there was constant pain in the right iliac region, accompanied with flatulent distension in the course of the colon, and constant vomiting after the taking of food. The patient's condition was for a time improved by the use of purgatives, but he became very emaciated, and gradually sank.

In the examination after death, about three quarts of serous fluid were found in the cavity of the abdomen. The viscera, with the exception of the intestinal canal, appeared healthy. The end of the ileum, and the cæcum, with their walls thickened and indurated, were firmly adherent to the iliac fossa, and their calibre was diminished to less than half an inch in diameter. Imbedded in the ulcers of the cæcum were five cherry- and damson-stones, a piece of hard wood, and the half of a small button; and six or seven similar fruit-stones were found loose in the neighbouring part of the intestine.

Presented by J. M'Donnell, Esq.

1186. Some of the cherry- and plum-stones, with a raisin-stone, and a small piece of wood, from the cæcum last described.

1187. Numerous plum- and cherry-stones, which were voided from the intestines of a boy eleven years old, through an external abscess.

From the Museum of John Heaviside, Esq.

5. Congestion and Inflammation of the Mucous Membrane of the Intestinal Canal.

1188. Portion of ileum, in the mucous membrane of which the blood-vessels are intensely congested, giving it an uniform deep-red colour. It appears

also to have been thickly covered with mucus, which is coagulated and made flocculent by the alcohol. The villi are very large. The mesentery and peritoneum have been deeply stained with blood during the preparation of the specimen.

From a patient who had hæmorrhage from the intestines.

From the Museum of George Langstaff, Esq.

1189. Portions of ileum, the vessels of which are intensely congested with blood, giving its mucous membrane a uniform red colour. The textures appear in other respects healthy.

From a woman who died a few hours after being extensively scalded over the chest and abdomen. There had been profuse hæmorrhage from the intestines.

From the Museum of George Langstaff, Esq.

1190. A cæcum, with a portion of colon, in which, probably in consequence of long-continued congestion, the surface of the mucous membrane is finely mottled with black, grey, and white, so that at a distance it appears of a deep iron-grey colour. The membrane is not altered in its apparent structure, nor does the change of colour extend into the ileum.

From a woman sixty years old, who had long suffered with chronic peritonitis and disease of the uterus.

From the Museum of George Langstaff, Esq.

6. *Effusion of Lymph, Thickening, and other Effects of Inflammation of the Mucous Membrane.*

1191. A portion of the ileum of an ass, in which the vessels of the mucous membrane are greatly congested. Small flakes of lymph are loosely attached to the surfaces of both the mucous and the peritoneal coats.

Other portions of the same intestine are preserved in Nos. 84 to 87: and Mr. Hunter's description is added to the account of them in vol. i., p. 39.

Hunterian.

1192. Portion of jejunum, the coats of which are much thickened, and appear consolidated. A considerable deposit, hanging in loose shreds, is attached to the surface of the mucous membrane.

The patient died with the cancer of the stomach, preserved in No. 267. About eighteen inches of the intestine were in the same state as this.

Hunterian.

1193. Two portions of colon, the coats of which are thickened and indurated. The surface of the mucous membrane is unusually wrinkled and granulated.

Hunterian.

7. *Ulceration.*

LIKE the specimens of Ulcers of the Stomach in the preceding Series, these of Ulcers of the Intestines are arranged according to the apparent nature and origin of the ulcerative process. They display several distinct forms of ulcer, each probably peculiar to and characteristic of a different disease; indeed, so characteristic that, although very little is known of the history of those from whom these specimens were taken, it is yet possible to arrange them with great probability in the order of the diseases in which they, severally, had their origin. The peculiarities of each form of ulcer are described in the accounts of the specimens displaying it; the several forms are the following:—

1. An ulcer, shown here in the large intestines alone, closely resembling the *Hæmorrhagic Ulcer*, or *Erosion* of the Stomach, Nos. 1194-5-6.

2. The wide-spread superficial ulceration, or excoriation, of the mucous membrane which occurs in diarrhœa, or catarrhal affections of the intestines, whether produced by natural causes or by purgatives, Nos. 1197-8.

3. The *Follicular Ulcer of the Large Intestines* (Rokitansky), of like origin with the preceding, and often associated with it, No. 1199.

4. The *Perforating Ulcer*, having all the characters of the corresponding ulcer of the stomach; a rare form of ulcer even in the duodenum, near the stomach, and yet much rarer in lower parts of the intestinal canal, Nos. 1200, 1201.

5. The *Dysenteric Ulcer*, found exclusively in the large intestines, and in them presenting at least two distinct varieties, corresponding with the chronic and the acute forms of the diseased process. In the first, the primary form of

the ulcer is much like that of the follicular ulcer of the large intestine, but the general aspect of the diseased part is modified by the thickening, serous infiltration, and other changes of the tissues about the ulcers; and in the progress of the ulcers their form is lost as they irregularly spread and coalesce. In the other, the acute, cases of dysentery, the process is one not of definitely circumscribed ulceration, but of rapid and extensive sloughing and casting off of portions of the mucous membrane, Nos. 1202 to 1210.

6. The *Typhous Ulcer*, of which the numerous specimens show the chief forms, as well as its progress towards perforation of the intestinal walls, and its arrest and progress towards healing. The variety of appearances here displayed in the several stages and circumstances of one disease afford a good example of the wide range which must be taken in describing the changes of structure characteristic of any morbid process, Nos. 1211 to 1219.

In the next following division of this Series, containing the specimens of Cancerous and Tuberculous Disease of the intestines, the forms of ulcer which are characteristic of those affections, and are very distinct both from each other and from all the forms just referred to, are also shown.

1194. An inverted cæcum, in which are several minute ulcers of the mucous membrane, very like the small hæmorrhagic ulcers of the stomach, as shown in No. 1149. They are of various shapes; some oval, some strip-like, some with irregular outlines. Some are quite superficial, but some extend through the whole thickness of the membrane, and have smooth, abrupt, not overhanging margins: their bases are level, and formed apparently by healthy tissue. The tissues adjacent to them also appear healthy. *Hunterian.*

1195. A cæcum, with parts of the ascending colon and of the ileum. In the mucous membrane of the cæcum and colon there are several small ulcers, of various shape, with sharp abrupt edges and smooth bases, very like those last described, but larger. The mucous membrane of the ileum is healthy. *Hunterian.*

1196. A portion of the colon of a lion, the blood-vessels of which have been injected. All its coats are thickened, and there are several small circular superficial ulcers of the mucous membrane. *Hunterian.*

1197. Portion of ileum, in which there has been extensive superficial ulceration of the mucous membrane. The ulcerated parts may be distinguished in irregular strips and patches of a whiter colour than the intervening portions of the membranes, and smoother, from the absence of villi. The ulceration has chiefly affected the membrane intermediate between the collections of aggregated glands, and some of the latter, as well as some of the solitary glands, are completely insulated by it. The intervening and adjacent tissues appear healthy. *Hunterian.*

1198. Portion of jejunum, in which parts of the free borders of many of the valvulae conniventes have been irregularly and superficially ulcerated, as if corroded or gnawed. The principal ulcerations are situated immediately beneath the attachment of the mesentery.

From a man who had medullary and melanotic disease in several parts of his body.

The case is related in the "Medico-Chirurgical Transactions," vol. iii., p. 277; London, 1812, and an abstract of it is added to the description of No. 287, in vol. i., p. 130.

From the Museum of George Langstaff, Esq.

1199. Portion of colon, in the mucous membrane of which there are numerous round and oval ulcers, from one to three lines in diameter. The long axes of the oval ulcers are placed transversely to the axis of the intestine. Their margins are thin, clean, and regularly defined, and in several instances project over their bases, which are generally more widely ulcerated, and are like the cavities of small cup-shaped open abscesses in the sub-mucous tissue. The bases of some of the ulcers appear granular, and are covered with secretion. The intervening portions of the mucous membrane, and the other adjacent tissues, appear healthy.

The following account of the examination of the patient from whom this specimen was taken is from the Hunterian MSS. :—

" The appearances upon opening the body of the Right Honourable the Earl of Bristol.

" On opening the chest, the cartilages of the ribs were found ossified.

" The first thing that presented itself was more fat than common upon the pericardium. Upon opening this membrane, I found that it adhered everywhere to the

heart. The heart was so remarkably small that I could not help wondering at it; but it was sound in its substance. Was this owing to the pericardium's adhering to it? The diaphragm was remarkably high, so as to make the chest very short between the upper and lower part; yet the lungs were perfectly sound, and free from adhesions.

"The liver was small, and much more in the right side than common: so much so, that the gall bladder was quite in the right side, and the ligamentum rotundum almost in the right. Some adhesions to the diaphragm, of old standing, on the upper surface, but on the whole pretty sound. The gall-bladder was very small, containing no bile, but a transparent slimy mucus. A small gall-stone lay in the beginning of its duct, which obstructed the passage of the bile into it. This would hint as if the gall-bladder did not secrete bile.

"The hepatic ducts and ductus communis were perfectly free, and the bile in them was of a light yellow colour.

"The stomach contained a dark-coloured liquor which was continued through the whole of the small intestines, but rather becoming yellower towards the last. The stomach did not appear unsound.

"The duodenum, jejunum, and most part of the ileum, were sound, but the ileum towards the last was a little ulcerated. The colon and rectum on their inner membrane were ulcerated in a great number of places, through their whole lengths: and in some of those ulcerations there were evidently streaks of blood. They contained some yellow faeces, with a great deal of slimy mucus. The pancreas was sound. The bladder was sound.

"The external appearance of the stomach and intestines was rather darker than common; in other respects they appeared very sound. The darkness of the colour of the contents of these canals was most probably owing to an extravasation of blood in the stomach, although I could not observe from whence it came. But I believe it may be remarked in general, that a small extravasation of blood in the stomach soon loses the bloody tinge, and becomes livid.

"When this inky-coloured coffee was diluted it did not give the least tinge of blood or bile; therefore, if it was either the one or the other, it had then lost these qualities by the power of the stomach. If it was the bile, there was no reason to suppose it to be of this kind when secreted, as the bile in the ducts was yellow, or of a natural colour: and what is next to a proof of this, the faeces gave the yellow tinge when diluted; which they would not have done, if this in the stomach had been the bile.

"He had been long affected with the gout before his death, and of which he died. He had frequent vomitings of this black fluid, which was called black bile; he had also a purging with blood. At last he had hiccough, and died."—*Hunterian MS. Dissections of Morbid Bodies*, No. 174.

1200. Parts of a stomach and duodenum, exhibiting an ulcer of the duodenum, which presents the characters of the perforating ulcer of the stomach. It is of nearly circular form, has abrupt margins, and is an inch in diameter.

It has extended through all the coats of the intestine, and exposed the pancreas, the surface of which now forms its base. The nearest margin of the ulcer is one third of an inch from the pylorus. A bristle is placed in an artery on the pancreas, which was opened in the progress of the ulcer, and permitted fatal hæmorrhage.

The patient, a girl aged fifteen, was admitted into the London Hospital, March 16, 1844, on account of a burn, which extended over the front of the chest, left upper extremity, neck, and upper part of the back, partially destroying the true skin. The injury was not followed by much collapse, but on the following day she had an attack of fever, which continued for four or five days. On the 21st she became very weak, and complained of pain from the burn, for which opium, ammonia, and wine were administered. The following day she felt better, but from that period till her death she complained of pain at intervals in the epigastric region. On the 30th she vomited a large quantity of dark tar-like fluid. From this time she sank rapidly, and expired about twelve hours afterwards, having passed in the course of the day dark matter by stool.

On the examination of the body (besides what is shown in the preparation), the heart was found flabby, with only a small quantity of blood in its cavities. The stomach contained a quantity of dark fluid, resembling that vomited during life, and in the intestines there was dark pitchy-looking matter.

The case is further reported in "The Lancet," June 14, 1844: p. 387.

Presented by Thomas Blizard Curling, Esq.

1201. Portion of ileum, in which there is a small oval perforating ulcer. The aperture in the mucous membrane is much larger than that in the peritoneum; both are oval, and their long axes are placed at right angles to one another. The margin of the ulcer is in both coats definite and sharp; the base gradually shelves towards the aperture in the peritoneal coat. The adjacent tissues appear healthy. *Hunterian.*

1202. Portion of colon, from a woman who died with chronic dysentery at the Penitentiary in Millbank. The mucous membrane is extensively ulcerated, portions of it of various size having been completely removed. The primary form of the ulcers is shown in a few which still retain it, and which are circular or oval, a line or two lines in diameter, deep, with regular abrupt margins, and more widely excavated in the submucous tissue, like the follicular ulcers of the large intestine, shown in No. 1199,

from which, however, they differ in their edges being thicker and more swollen. But in most parts the ulcers are much larger, and of irregular shape, as if formed by the coalescing of many like those of the smaller size. The sub-mucous tissue beneath and between the ulcers is thickened, œdematous, and indurated; the greater part of the surface of the remaining mucous membrane is grey, and appears irregularly swollen.

Presented by Dr. Baly.

1203. Portion of colon, from a patient who died with dysentery. The mucous membrane is swollen, and there are very numerous, minute, circular and oval, deep ulcers in it, like those last described. Like them, also, many have coalesced, so as to form irregular strips and patches of ulceration. The tissue bounding the ulcers is not indurated or more changed than that intervening between them.

From the Museum of George Langstaff, Esq.

1204. Portion of colon, in which, probably during dysentery, the mucous membrane was extensively ulcerated. The ulcers are for the most part isolated, and of round or oval form; they extend through the whole thickness of the mucous membrane, and have smooth bases and abrupt thick edges. They are very numerous, and in some situations several of them have coalesced, so as to insulate small patches and tracts of the swollen and granular-looking mucous membrane. The walls of the intestine are much thickened, and its canal is bent from its usual course by the adhesion of the peritoneal surfaces of two contiguous portions.

Hunterian.

1205. Portion of rectum, from a lady who had (probably chronic) dysentery, showing a more advanced stage of the process displayed in the preceding specimens of dysenteric ulceration. There are numerous large ulcers of the mucous membrane, irregular in form and size, and a few oval, deep, small ulcers, such as are shown in the preceding specimens. The remaining portions of the mucous membrane are almost insulated by the ulceration spread round them. The sub-mucous tissue is still more

extensively ulcerated, and in several parts (indicated by bristles) has been removed from beneath long strips of the mucous membrane, which thus appear like bridges connecting the few and small remaining portions of the membrane. The fat around the rectum appears indurated, and consolidated with the coats of the intestines. *Hunterian*

1206. Portion of colon, of which, probably during acute dysentery, nearly the whole of the mucous membrane has been removed by ulceration and sloughing. What remains is rough and ash-coloured, spotted here and there with blackened follicles; its margins hang in loose long shreds in the cavity of the intestine. The bases of the ulcers are, for the most part, smooth, formed by the exposed sub-mucous and circular muscular coats. Their outlines are irregular, but of those in which any direction can be discerned the long axes are transverse to the axis of the intestine; many of the ulcers extend nearly round the canal.

Presented by Sir William Blizard.

1207. A cæcum, with the ascending colon, and part of the ileum, inverted; probably from the same patient as the specimen last described. They are similarly diseased, but the disease becomes rather less intense towards the ileo-cæcal valve, and, except that its coats appear to have been too vascular and swollen, the ileum is healthy.

Presented by Sir William Blizard.

1208. A cæcum, with the end of the ileum, and part of the colon. In one part of the colon the mucous membrane lining its whole circumference, and for an extent of between three and four inches in length, has been destroyed by ulceration and sloughing. The ulcerated surface is very irregular, but not apparently indurated; in some parts it is flocculent, in others covered with shreds of the mucous and sub-mucous tissue; and in others the circular fibres of the muscular coat are exposed. The same surface presents groups of a kind of polypous growths, formed apparently by the increase of portions of the mucous membrane which were not ulcerated: and there are

more numerous similar growths about the borders of the ulceration. There is another ulcer of smaller size, but with the same general character and similar polypous growths, in the cæcum. The ileum is healthy.

The patient is said to have died of phthisis; but there can be little doubt that this ulceration occurred in dysentery.

From the Museum of George Langstaff, Esq.

1209. A portion of the colon of a lion. The greater part of the mucous membrane is destroyed by ulceration, like that of acute dysentery, and long shreds hang loosely from the exposed surface. *Hunterian.*

1210. Part of a rectum, in which are several large irregularly shaped, but chiefly transverse, healing ulcers of the mucous membrane. The bases of the ulcers are uneven and very coarsely granulated; they do not appear thickened or indurated. Their margins are irregular, and overhung by the borders of the adjacent healthy mucous membrane, which in every part projects one or two lines over the ulceration of the sub-mucous tissue.

From a man who for several months had chronic dysentery.

From the Museum of George Langstaff, Esq.

1211. The lower end of an ileum, with part of a cæcum and its appendix, from a woman who died with typhus fever. The mucous membrane, generally, is swollen and brownish-grey. The Peyer's patches, and several solitary glands, are exceedingly developed. Elevated, broad, convex and rather overhanging borders of mucous membrane surround the patches, which have also narrow ridges traversing them, and forming partitions and a coarse net-work between the cavities from which the sacculi have been discharged. The villi on these borders and ridges are greatly developed; even rather more than those on other parts of the mucous membrane. At the centres of several of the patches there are large, partially separated, shapeless, firm, and flocculent sloughs, in which the whole thickness of the mucous membrane is included. There are some

smaller sloughs of the same kind in the enlarged solitary glands: and in some of the patches the sub-mucous tissue, apparently not much diseased, is exposed by the separation of the sloughs. The mesenteric glands near the ileo-cæcal valve are enlarged. In the cæcum and its appendix the disease has not proceeded beyond enlargement of the glands.

From the Museum of George Langstaff, Esq.

1212. A similar specimen, from a patient who died with typhus at Vienna, exhibiting, also, numerous small, round, shreddy, and dirty sloughs of the mucous membrane of the cæcum, like those of the solitary glands of the ileum. Each slough is surrounded by a narrow ulcerated groove, indicating the process for its separation.

Presented by Charles Moore, Esq.

1213. The lower end of an ileum, from a case of typhus fever at Vienna. A large patch of Peyer's glands, occupying nearly the whole circumference of the intestine, is diseased, presenting an elevated margin, and a flocculent surface made irregular by elevations and depressions. Some of the depressions are produced by the separation of small sloughs, exposing the muscular coat: other portions of the patch are covered with small flakes, apparently of lymph. By the side of this patch is another of smaller size, similarly diseased; and above it, an enlarged solitary gland, with a slough in its centre.

Presented by Charles Moore, Esq.

1214. Portion of ileum, doubtless from a case of typhus fever, exhibiting a more advanced stage of the disease already described. The borders of the Peyer's patches, and the mucous membrane generally, are less swollen; the villi are smaller. In many places, large sloughs have separated from the patches of glands, exposing the submucous tissue, or the circular muscular fibres, either apparently healthy, or else a little thickened and granular. In other places, large flocculent, shrivelled-up, and dirty brownish sloughs remain attached in the places of the glands, and hang in

loose shreds into the cavity of the intestine. The solitary glands and the smaller Peyer's patches are less diseased than the larger. Wherever sloughs have separated, the sloughing has extended a little under the swollen and elevated border round the patch, which border therefore appears like a thin margin overhanging the base of the ulcer.

Hunterian.

1215. A portion of ileum, in the mucous membrane of which are several small circular ulcers with elevated margins, which appear to have been the result of the complete separation of sloughs of the small aggregated and solitary glands; several of the latter are enlarged.

Hunterian.

1216. Portion of colon, in which three small typhous ulcers are nearly healed after the separation of sloughs. The base of each ulcer, limited by the muscular fibres of the intestine, is smooth and clean, and overhung by the margins of apparently healthy mucous membrane, from beneath which the sloughs separated. All the other tissues appear healthy.

Presented by Charles Moore, Esq.

1217. Portion of colon, from a person who is said to have had dysentery. The ulcers partially healed, and the general aspect of the parts are like those last described.

Hunterian.

The preparation is engraved in "Baillie's Morbid Anatomy," Fasc. iv., Pl. ii. fig. 4.

1218. A cæcum, with its appendix vermiformis, and the last portion of the ileum, in each of which there are several small deep ulcers of the mucous membrane, probably typhous ulcers nearly healed. Their bases are smooth, formed of the sub-mucous tissue slightly thickened and granular, and the borders of their bases are covered by their elevated overhanging edges. The ulcers in the ileum have the form of small Peyer's patches; those in the cæcum and its appendix are smaller, and either oval, round, or irregular in outline.

Hunterian.

1219. Portion of ileum, in the mucous membrane of which there are several large ulcers, probably typhous ulcers, healing after the complete separation of the sloughs. They are irregular in shape, but approach the round or oval form, and are situated opposite the attachment of the mesentery. Their bases are smooth, being formed by the layer of transverse muscular fibres, cleanly exposed; and they are bounded by healthy mucous membrane, a border of which, a line or two in breadth, projects and hangs over the base of each ulcer. All the adjacent coats of the intestine appear healthy. *Hunterian.*

1219A. Portion of ileum, in which several small typhous ulcers are completely healed. Their bases are smooth and clean, formed, apparently, of cellular tissue: their margins do not overhang their bases, but are gradually inclined towards them. There is no contraction, wrinkling, or stricture of the intestine near or around the ulcers: and all the tissues adjacent to them appear healthy. *Presented by Charles Moore, Esq.*

8. *Cancer of the Intestines.*

1220. Portion of duodenum, on the interior of which are several small oval tumours, composed of soft medullary substance. Some of them are ulcerated on their exposed surfaces; some appear to have sloughed, and partially separated.

From a man who had similar tumours in several parts of the body. One from the axilla is preserved in No. 286.

From the Museum of George Langstaff, Esq.

1221. Portion of jejunum, on the inner surface of which is a flat tumour, superficially lobed, with a sinuous border, occupying the whole circumference of the intestine, and about two inches wide. The tumour has a soft, obscurely fibrous structure, and part of its surface is ulcerated. On another portion of the same intestine, a similar but smaller tumour has been cut through, and its sections present soft surfaces, with long shreds hanging from them. *Hunterian.*

1222. Portion of colon, which is at one part abruptly contracted, to such an extent that its canal is nearly closed. The contraction appears to have taken place around a small ring-shaped, spongy, medullary tumour of the mucous membrane. The tissues round the tumour are slightly thickened and indurated; above it, the canal of the intestine is considerably dilated; below it, contracted. *Hunterian.*

1223. A similar specimen, in which the canal appears to have been completely and suddenly closed. The tumour round which the contraction took place is very small; and the adjacent tissues appear nearly healthy.

Presented by Sir Everard Home.

1224. Portion of colon, near its termination in the rectum. The canal, through a length of an inch and a half, is very nearly closed by the thickening and contraction of its walls round, apparently, a small flat and superficially ulcerated cancerous tumour. On the exterior of the contracted part, some enlarged lymphatic glands are indicated by portions of bristles. The intestine above the stricture is dilated; and, below it, is contracted. *Hunterian.*

1225. Portion of the sigmoid flexure of a colon, exhibiting appearances of disease similar to those last described. The canal is almost obliterated. The inner surface of the tumour is ulcerated; its margins are somewhat elevated and sinuous. The mucous membrane of the portion of intestine below the stricture is deeply wrinkled, but healthy.

The patient, a man thirty-two years old, appeared healthy till within seven weeks of his death, when, for a few days, he had pain about the umbilicus. Some time after, he had signs of inflammation of the intestines, attended with obstruction of the intestinal canal, which continued insuperable for seven weeks.

After death, an ulcerated aperture was found above the disease here shown, opening the intestine into the cavity of the abdomen. The whole canal above the disease was exceedingly distended with fæces and bile.

Presented by Joseph Swan, Esq.

1226. Portion of intestine (not human), of which the mucous membrane is

elevated by a layer of small, closely set vesicles, filled with a pellucid fluid; an example, perhaps, of alveolar cancer. *Hunterian.*

9. *Tubercle of the Intestines.*

1227. Portion of the lower part of an ileum (with a small diverticulum) exhibiting numerous large tuberculous ulcers. The ulcers are various in form and size; they are situated on all parts of the intestine, and some of them extend round its whole circumference. Their margins are irregular, elevated and somewhat thickened, but not abrupt nor overhanging; their bases are very uneven, the ulceration penetrating to different depths; and, in some cases, small tubercles may be seen lying beneath and elevating the ulcerated surface. Two of the ulcers have penetrated through the whole thickness of the coats of the intestine, and in several others the peritoneal coat alone remains. Numerous groups of small tubercles lie scattered beneath the peritoneum, and on many parts of it there are remains of adhesions.

Presented by James Paget, Esq.

1228. Portion of the colon from the same patient, with several similar ulcers. One of them has perforated the intestine. There are also similar tuberculous deposits beneath the peritoneum.

Presented by James Paget, Esq.

1229. Portion of jejunum, inverted, in which an ulcer (probably tuberculous), occupying the situation of a collection of Peyer's glands, has penetrated through all the coats. The ulcer is nearly circular, has a diameter of about half an inch, and its margins are smooth, rounded, and abrupt. The rest of the intestine appears healthy. *Hunterian.*

1230. Portion of jejunum, with part of the mesentery. An oval ulcer, extending more than half round the intestine, has penetrated deeply through its mucous membrane, and has at one part perforated all its coats. The aperture, which is circular and about one-third of an inch in diameter,

was closed with a thick layer of false membrane, part of which is now reflected. Beneath the peritoneum surrounding the aperture are some small masses of tubercle, and several lymphatic vessels, tortuous, and distended with tuberculous matter, some of which may be traced in the same condition to three enlarged mesenteric glands. *Hunterian.*

1231. Portion of small intestine, from a person who is said to have had dysentery, but probably had tubercular phthisis. There are several ulcers of the mucous membrane, of an elongated oval form, having their longest diameters transverse to the axis of the intestine, and, in two instances, extending round it. Their bases are irregularly and very coarsely granulated and knotted; their margins well defined, uneven, formed of somewhat thickened mucous membrane, and in parts just overhanging their bases. In the middle of the largest ulcer (at the upper part of the preparation) the ulceration has, in a very minute space, extended abruptly through all the coats. The peritoneal coat of the intestine is almost covered with recent lymph; and all its coats are rather thicker than is natural. *From the Museum of John Heaviside, Esq.*

1232. Portion of colon, from a person who is said to have recovered from dysentery, but the ulcers have more of the tuberculous than the dysenteric characters. Two of them, elongated and oval, are very like those last described, but their margins and bases are smoother, as if nearly cicatrized. Beneath the peritoneum covering the larger of these two ulcers, are some appearances of small tubercles. The other ulcers are small, round, or oval, with level bases, and elevated smoothly rounded margins turned in over the borders of their bases, and nearly healthy in their apparent texture. *Hunterian.*

- 1232A. Portion of small intestine, from a *Cariama* (*Microdactylus cristatus*), the blood-vessels of which have been minutely injected. It exhibits several small masses of tuberculous matter, raised a little above the surface of the mucous membrane, and many of them exposed by its ulceration. The paleness of the tuberculous matter contrasts strongly with the bright redness of the injected mucous membrane and its villi; the more strongly,

because the villi are removed from over the surface of nearly all the tubercles. In the centre of the specimen is a large elevated patch, probably of diseased glands, covered with a dark layer like a slough.

Presented by the Council of the Zoological Society.

1233. "Scrofulous tubercles on the [stomach and] intestine of a sparrow."—*Hunterian MS. Catalogue.*

Specimens of Diseases of the Intestines in other parts of the Museum :—

Wounds, 1306, 1383.

Enlargement, 3449.

Peritonitis and its effects, 1110, 1112, 1116, and others in Series xxi. and xxv.

Inflammation of the mucous membrane, 84 to 89, 1246.

Hemorrhage, 326.

Ulceration, 123, 124, 1242, 1244, 1249, 1252, 1300, and others among the specimens of Hernia in Series xxv., and of Artificial Anus in Series xxvii.

Tumours 268, 1125, 1129, 1378, 1379, 1380, 1388.

SERIES XXIII.—Appendix.—PECULIAR DISEASES OF CERTAIN PARTS OF THE
INTESTINES.

a. Diseases of the Glands imbedded in the Intestinal Walls.

1234. Portion of ileum, in which the Peyer's and solitary glands are very large; some of the latter are elevated upon short narrow pedicles. The villi are very long and turgid; but neither they nor the glands exhibit any morbid change of structure. "An appearance like inflamed glands. I once saw the same appearance before."—*Hunterian MS. Catalogue.*

1235. Portion of ileum, inverted, in which there is a very large and prominent patch of Peyer's glands. The sacculi, full of apparently healthy contents, are well seen beneath the surface of the mucous mem-

brane. The solitary glands, also, are large, and project far beyond the surrounding surface of the membrane. The villi are long and turgid.

Probably both this and the preceding specimen exhibit only the healthy aspect of these parts during the active discharge of their several functions.

Hunterian.

1236. Portion of ileum, in which the mucous and submucous tissues surrounding and subdividing a large collection of Peyer's glands are thickened and elevated above the surrounding surface. The elevated part has a smooth raised border, and its surface is perforated with numerous round and oval apertures leading to small pits, but without any appearance of ulceration. The adjacent solitary glands are enlarged.

Hunterian.

1237. A similar specimen, in which several small collections of Peyer's glands are elevated above the surrounding surface. Their borders are smoothly rounded, and their surfaces perforated by numerous large apertures.

Hunterian.

1238. A similar preparation.

Hunterian.

1239. A similar preparation, exhibiting, like the three preceding specimens, a patch of Peyer's glands, enlarged and elevated beyond what is usually found in health.

Hunterian.

1240. Portion of ileum, showing "inflamed glandular parts."—(*Hunterian MS. Catalogue.*) The patches of Peyer's glands appear swollen, and occupied or covered with some morbid substance.

1241. Portion of ileum, in which the tissue around part of a collection of Peyer's glands is thickened, and (when recent) appeared inflamed. A piece of false membrane adheres to the peritoneum opposite the diseased part, over a spot in which there is an appearance of a small deep ulcer.

Hunterian.

1242. Portion of ileum of which the blood-vessels were minutely injected. Two collections of Peyer's glands are elevated above the surrounding membrane, and their surfaces are rendered irregular by numerous long and chiefly transverse ulcerated (?) depressions. Adjacent to them are several small circular ulcers with elevated round margins. The parts occupied by the glands are much less vascular than those around them.

The preparation is engraved in Baillie's 'Morbidity Anatomy,' Fasc iv. Pl. 2, fig. 3. The specimen is probably a part of that which Mr. Hunter describes in the following case :—

" *Winter, 1763-4.*—A man in Mr. Fordyce's hospital had just recovered of a fever, when he was taken ill with a violent pain in his belly just at the navel. He was ordered a clyster and a blister, but he had a natural stool; the pain continued, and within twenty hours of the attack he died.

" Upon opening the belly we found the peritoneum very much inflamed; the epiploon covered the whole [of the] viscera, and was of a darkish colour, as if wetted with blood. We found an universal inflammation in the whole visible contents of the abdomen; the liver was glued to the diaphragm and the stomach wherever it touched. All the intestines were likewise glued together, and of a very dark colour where there was no compression by other surfaces.

" I examined the gall-bladder, and found it as large as my fist, and two holes at its fundus. Upon introducing my finger I found two more. There was but little bile in it, for it was all got loose in the cavity of the abdomen, and had by that [means] tinged the glutine.

" I took out a piece of the ileum to inject, to see the size of the vessels, which I did.

" Upon the inside of the intestines I observed several bodies, some as broad as a farthing, some smaller: they had a depression in their middles, so that they appeared like circular or oval ridges or risings. The texture of these risings was spongy or cellular, whose openings looked into the guts.

" Some of them appeared to be a thickening of the rugæ of the internal surface, for in the oval ones I could trace two rugæ into them. Why they should be depressed in the middle I can't tell, but this appearance I have often seen.

" Was the gall-bladder become rotten in this short time, or was it just burst as the pain came on, and was the cause of this universal inflammation in the abdomen? This is somewhat reasonable, as the inflammation seemed to be more on the external surface of the viscera than on the internal."—*Hunterian MS.: Dissections of Morbid Bodies*, No. 68, p. 94.

1243. A similar preparation. Many of the depressions on the surface of the elevated portion are filled with small masses of a white flocculent substance resembling sloughs. *Hunterian.*

1244. A similar preparation, with more distinct appearances of ulceration.

From a person who is said to have died with dysentery.

Hunterian.

1245. Two portions of ileum, in which the Peyer's and solitary glands are very much enlarged, and appear in some situations to be superficially ulcerated.

Hunterian.

The following cases most probably belong to some of the preceding specimens of affection of the intestinal glands; and, though it is perhaps impossible to assign them exactly to their appropriate specimens, are inserted because they will serve to show Mr. Hunter's thoughts upon the subject, and how closely he was observing in the hope of explaining the appearances exhibited in these preparations:—

“*September, 1758.*—In this autumn we got a stout man for the muscles, from St. George's ground. He had been blistered on the back and arm.

“In taking out the intestines I observed a volvulus in the ileum, where the inferior [portion] was pushed up into the superior; and a little way from that I found another, but just the reverse. I found likewise, in the intestinum ileum, a number of inflamed spots, some very broad, some very small. These parts were extremely thickened, became more in number, and broader, towards the termination of the ileum. I injected the piece where the volvulus was, where there were some of these inflamed spots. I found them very vascular in substance, but the villous coat of the intestine was there destroyed. They were very irregular on their surface, like swelled ulcerated tonsils; and those that were very bad had adhering to the surface a slough of yellow matter. Besides these broad swellings, there were a great many of a lesser size that were not ulcerated. The smallest were round bodies about the size of large pins' heads; and as they became larger they became flatter, and seemed to be more porous. On each of the small ones I saw a dark spot, and, upon blowing on that spot, it was evidently an orifice in the internal villous coat of the intestine; and on examining the gradation of their size, I could plainly see this orifice become larger as the small body became larger, so that it exposed more and more of the internal surface of the small body; and then I could plainly see that the body was porous, something like the mamma of the kidney at its very point, and on squeezing I could throw out some mucus.

“These appearances seemed plain to me to be the glands of the intestines increased by inflammation, and at last ulcerated; and as the glands of the intestines are of two sorts, we had two sorts of swellings: for I take the small, round, and flat bodies to be the solitary, and the broad ones to be the aggregate, as there are really such ones in the intestines.

“What confirms this most is, that the parts that were least inflamed had very nearly the common appearance that the aggregate have without inflammation, so that I could trace on the gradation of inflammation from the first to the last. That the small


ones were glands I am pretty certain, on account of the orifices, and the mucus that I squeezed out; and what still confirms it further is, that these glands are most in the ileum, especially the aggregatæ.

"These parts I have made preparations of. I have preparations of the same appearances, but not come to such a state of inflammation, and these preparations prove them to be glands; and these broad appearances I have seen several times, but never understood what they were.

"I think inflammations are generally more frequent in the ileum than any other of the intestines, and are, I think, generally more violent. What is the cause of this I don't know, but it is perhaps for two reasons: first, that inflammation sooner attacks the glands of the guts than any other part, as in this body, and in some more that I have seen; secondly, that inflammation of the stomach, duodenum, and jejunum, is not carried to such a length before death happens.

"The colon seems to be the next, especially above the cæcum and rectum, for we often find this inflamed and ulcerated."—*Hunterian MS.: Dissections of Morbid Bodies*, No. 48, p. 55.

"I opened the body of Sir William Lee's child, who died of convulsions and fever, supposed to arise from teething. It was one year and a half old. She was always inclinable to be costive; took magnesia, crabs' eyes, &c.

"The abdominal viscera appeared to be very sound, excepting on the external surface of the intestines there were vascular spots, and a loose vascular fringe hanging from them, as if they had formerly adhered by these, but they had been broke off; but this can hardly be supposed to be the case. On feeling these between the finger and thumb, I found them thicker than the other parts of the intestines. I cut into the intestines, and examined their appearance on their inside. I found that they were without exception in the glandular parts of the intestine, and that it was a gland increased to the breadth of sixpence in some parts, but in common much smaller; and that the inner surface of the cavity or duct was spread in some  so wide, villous on the inside, with a loose floating edge, which was not so wide as the bottom, something like a Scotchman's bonnet. Some of them had no glandular part of the gut contiguous to them, therefore were the solitaria; others, especially those in the ileum, were only one of the aggregatæ, for it was either surrounded with them or at one end. The appendix cæci was full of them.

"What surprised me was, that these are just the appearances of these parts of the intestines in the first stages of the dysentery; yet this child had no symptoms of any complaint in the bowels, excepting the very reverse of a dysentery. The lungs had greatly the smell of the smallpox."—*Hunterian MS.: Dissections of Morbid Bodies*, No. 119, p. 202.

"On opening Miss Todd, a young Girl about nine years of age, who had been ill for a considerable time with Complaints in her Breast and Bowels:

"Just before she died she was very costive, and hardly anything would pass through her. She had purges given her, which only seemed to bring away a little mucus, with

some quantity of excrement. Her belly swelled much, and seemed not to be lessened by the physic.

"We found in the abdomen all the viscera sound to appearance, only the colon very much distended with air, and some dark knotted fæces, but not a great deal in quantity. At the termination of the ileum and beginning of the colon, there were the hollow cups or small circular parts of the inner membrane, whose hollowed surface is often irregular, and where the inner coat terminates there it rises, or forms a brim, like many callous edges of sores, but they were very slight. The lungs on the left side were adhering everywhere to the pleura, with steatomatous swellings in them.

"The ventricles were distended with water, I should suppose about four ounces. The cerebellum had a number of small round bodies of the steatomatous kind in its substance, of a green colour.

"There were no symptoms before death that could make a physician suppose that there were any diseased appearances in the brain."—*Hunterian MS. : Dissections of Morbid Bodies*, No. 147, p. 238.

1246. Portion of an ileum, in which all the Peyer's patches and solitary glands are swollen and elevated. In the recent state their tissues appeared œdematous, succulent, soft, and rather thickened; and all the adjacent and intervening mucous membrane was similarly, but in a less degree, diseased. In a few places there are small deep ulcers in the middle of the Peyer's patches, and the tops of the swollen solitary glands appear superficially ulcerated.

The patient, a lad fourteen years old, was affected with diarrhœa during an attack of bronchitis; but appeared convalescent, when, four days before his death, diarrhœa again ensued, attended with severe pain and tenderness of the abdomen, constant vomiting, and fever.

Presented by Dr. Baly.

Other Specimens of Diseases of the Peyer's and Solitary Glands:—

Nos. 1211 to 1215, 1218, 1219, 1219A, 1229.

b. Diseases of the Ileo-Cæcal Valve.

1247. A cæcum, with a part of the ileum. The aperture of the ileo-cæcal valve is large, and its margins are thickened as if œdematous. There is no other appearance of disease. *Hunterian.*

1248. The lower end of an ileum, with part of a cæcum and its appendix. The aperture of the ileo-cæcal valve is contracted to a diameter of a quarter of an inch: a quill is passed through it, and is closely surrounded by it. The lower part of the ileum is dilated. The adjacent mucous membrane and other tissues appear healthy. An enlarged and indurated lymphatic gland is attached to some thickened tissue at one side of the termination of the ileum. A bristle is passed into the orifice of the appendix cæci.

From the Museum of Sir A. P. Cooper.

1249. A cæcum, with its appendix and the last portion of the ileum. The whole of the mucous membrane seems to be superficially ulcerated, for it is very thin, and there is scarcely a trace of the villi. At several scattered points the ulceration has extended more deeply, and has destroyed the whole thickness of the mucous membrane. This is especially the case at the ileo-cæcal valve, and in the appendix vermiformis. The edges of the former are as if corroded; the cavity of the latter is at one part obliterated.

Hunterian.

Other principal Specimens of Diseases of the Ileo-Cæcal Valve:—

Nos. 1184, 1207, 1211.

c. Peculiar Diseases of the Cæcum and its Appendix, and of those parts of the Colon which are closely fixed to the Walls of the Abdomen, and are not covered with Peritoneum.

1250. Part of a cæcum, with its appendix and the end of the ileum. A piece of whalebone is passed through a small ulcerated aperture in the coats of the appendix, by which its interior communicates with the cavity of an abscess external to the cæcum. The interior of the intestine is healthy.

The patient had been a healthy young man; but a seed, lodging in the appendix cæci, caused ulceration of it. An abscess then formed in the vicinity of the cæcum, and at length burst into the pelvis, and produced fatal peritonitis.

Presented by Joseph Swan, Esq.

1251. The end of an ileum, with the cæcum and its appendix. The free ex-

tremity of the appendix is adherent to the abdominal walls, and its cavity communicates with an ulcerated aperture in the groin, through which a quill is passed. The rest of the intestine is healthy.

From the Museum of John Heaviside, Esq.

1252. A portion of colon, of which the canal is at one part nearly closed by a thickening and contraction of its walls. At the seat of the stricture the mucous membrane is raised in thick folds, and several ulcers lead through it to narrow fistulous canals, which pass into the surrounding condensed tissues, in the course indicated by some bristles. Above the stricture are several small superficial ulcers of the mucous membrane.

It is probable that this disease originated in abscess in the cellular tissue connecting the colon with the abdominal walls.

Hunterian.

Other Specimens of Diseases of the Cæcum, and of the portions of Colon not covered with Peritoneum :—

Nos. 1184-5, 1190, 1194-5, 1207-8, 1211-2, 1218.

SERIES XXIV.—DISEASES OF THE RECTUM AND ANUS.

1. *Simple Stricture of the Rectum.*

1253. The lower part of a rectum, the canal of which, about an inch from the margin of the anus, is suddenly reduced to half an inch in diameter by a deep annular fold of its mucous membrane. Above the fold the mucous membrane appears healthy; below, it is excoriated; and in one place there is a narrow bridge of it, as if there had been an abscess external to it, or as if a bougie had pierced it. The tissues around the contracted part of the rectum are not manifestly diseased. There are several hemorrhoids at the margin of the anus.

From the Museum of Sir A. P. Cooper.

1254. Portion of a rectum, of which the canal is at one part suddenly reduced to less than a quarter of an inch in diameter by the thickening, induration, and uniform contraction of its walls. The stricture is half an inch in length, and terminates as suddenly as it commences. The intestine above the stricture is very much distended, and its muscular coat is hypertrophied; the part below it is small and atrophied.

Presented by Sir William Blizard.

1255. A rectum and part of a colon, the blood-vessels of which have been minutely injected. Six inches above the margin of the anus there is a very close and narrow annular stricture of the rectum, produced by thickening and contraction of its coats, and of the tissue immediately surrounding them. The inner surface of the stricture is ulcerated, and a small thin piece of fish-bone is sticking in it. Above the stricture the intestine is dilated to a diameter of nearly four inches, but its coats are not much thickened.

Presented by William Coulson, Esq.,

With the following history of the case :—

“ I was requested to see a woman, aged thirty-four, between four and five months advanced in pregnancy, who, three days before, had been seized with sickness, constipation, pain, and distension of the abdomen. These symptoms increased in severity, faecal matter was rejected from the stomach, the abdomen became more distended, no evacuation could be obtained from the bowels, and the injections which were attempted to be thrown up the rectum were immediately expelled. Her powers gradually sank, and on the third day from the commencement of the attack the patient died.

“ On examination after death, the colon was seen to be exceedingly distended, especially its descending portion, and about six inches from the anus a foreign body, believed to be a small portion of fish-bone, was found adherent to the lining membrane of the rectum, and pressed upon in this situation by the gravid uterus. Immediately below this body the bowel was completely closed, to the extent of half an inch, by the effusion of lymph caused by the presence of the foreign substance. There was no other morbid appearance.

“ Prior to the attack which destroyed this patient, she was in her usual state of health, and had no ailment whatever.”

1256. The lower part of a rectum, with the anus. On one margin of the anus are several large hemorrhoids, and the skin for a considerable distance round it is excoriated. At the right side of the anus is an appearance of a narrow granulating wound, as if a fistula had been there

operated on. Immediately above the anus, the canal of the rectum is suddenly and irregularly contracted to half an inch in diameter, but without any apparent change in the structure of its mucous membrane. Above the contraction it is unnaturally dilated, its coats are thickened, and the tissues around it appear rather indurated and confused. *Hunterian.*

2. *General Thickening and Induration of the Walls of the Rectum, and of the Tissues around them (Periproctitis).*

1257. A rectum, with the urinary bladder and other adjacent parts. About two inches above the anus the canal of the rectum is gradually reduced to less than half its usual size by extensive thickening, induration, and contraction of the walls and of the tissues round them. They are all converted into a uniform pale, brawny, hard substance, like that of a cicatrix. This change, and the stricture due to it, extend for about three inches up the intestine. The mucous membrane lining the diseased part is superficially ulcerated; above it, the intestine is greatly dilated, and its coats are thickened; below, it is deeply wrinkled, but apparently not of unhealthy texture. *Hunterian.*

The following is most probably the history of the case:—

“ The Case of General Gage.

“ About the spring, 1785, General Gage consulted me. He complained of a sensation in the rectum, attended with a kind of difficulty in going to stool when costive, and often a desire to go when there was nothing to pass. I examined the rectum, and found, as far as I could reach with my finger, a hard contracted ring surrounding the gut. I then pronounced what the case was, and what would be the event.

“ This hardness and thickening of the gut gradually increased, so as to make it difficult at times to pass the fæces, especially when costive. At last it occasionally became so difficult as to require the passing of bougies and hollow catheters, which one could always pass the lower stricture, but with difficulty passed the upper, which appeared to be three or four inches further up the gut.

“ Clysters, purgative, sedative, and diluting, were occasionally thrown up; which sometimes had their intended uses. In this way he went on, sometimes better, other times worse, but upon the whole becoming worse. At last it became difficult to pass a bougie, catheter, or even to throw up an injection, and which was attended with very disagreeable symptoms for the time, as acidity in the stomach, fullness, oppression, kind

of hiccough, a vast rumbling in his bowels, and want of rest; but he got occasionally a passage, which gave him relief for a time.

"He was of course put on a very low diet, and such as was thought best to answer the purposes of diet, while producing the least quantity of excrements, as also such as tended as little to acidity as possible. This was animal food in all the forms he liked best.

"All this art probably kept him alive for a twelvemonth longer than he otherwise could have lived, for without this attention one or two costive days would have almost killed him, which I think I have often seen.

"What appeared to be very singular, the constitution did not, till the very last, seem to feel the disease or its consequences, for his pulse kept slow and regular, never in the least hard; and when signs of dissolution had taken place, the pulse was only weaker, but not irritable. At last nothing passed through the strictures, either downwards by stool or upwards by way of clyster. The belly became gradually fuller and fuller, which was principally air, as he towards the last took but little food, and which was easily known by the sound in patting on the belly. He became in some degree insensible to his own situation, and in some degree less sensible of pain, which increasing, he died in that kind of easy and insensible manner.

"On opening the body the colon was found very much distended with air through its whole length: its transverse arch made a quick turn down to near the pelvis, then up upon itself to the left side, and then down the left, forming the sigmoid flexion; from all which turns, viz., making four, and being considerably distended, it appeared to fill almost the whole belly.

"There was a good deal of *faeces* in the colon, but not in the least distending it.

"On putting the hand into the bottom of the pelvis was found a considerable tumour, which, with the bladder and rectum, was removed: but in this operation it was found that the tumour adhered closely to the hollow of the lower part of the sacrum, so as to be obliged to lay that bone bare in the removal of it.

"On slitting down the rectum, which was very large, it was found to be very much thickened in its coats, and of a hardish gristly texture, a good deal like the turtle's intestines. This increase of thickness was to give it power to expel its contents.

"At the tumour the intestine contracted almost at once; and at its entrance into the tumour its inner coat was thrown into loose folds, so as to obliterate almost any appearance of a passage there: however, I could easily pass the end of my finger into it, those folds easily giving way. The tumour was next slit through, which showed a firm increase of the gut, near an inch thick all round, and for three inches in length. At the lower part it terminated all at once into the sound gut, which we had often felt when alive. The inner surface had lost entirely its natural appearance; was slightly rugged, so as to appear like villi.

"On introducing the pipe by the anus it was found to come butt against one side of the upper part of the cavity of the tumour, where there was a bend in its passage: but why a crooked pipe did not pass when attempted to be passed by turning it to all sides, I cannot conceive. Or, why a bougie which was slightly bent, did not hit the hole, is not easily accounted for: but what is more extraordinary than either, why a

clyster did not pass freely up ; or why did not the wind or soft excrements, that did yet lay, pass pretty readily down, while I could pretty readily pass the end of my finger down from the gut above into the tumour. The folds of the contracted part did not appear after death to have been sufficient for an entire stoppage of this kind."—*Hunterian MS., Cases and Dissections*, No. 59.

3. *Abscess by the Rectum, and Fistula.*

1258. A rectum, with a uterus, vagina, and other adjacent parts. The canal of the rectum is, through its whole length, contracted to about half an inch in diameter, and, as in the specimen last described, is surrounded by, and firmly united to, a large quantity of indurated cellular tissue and fat, by part of which it is unnaturally adherent to the posterior wall of the vagina. Nearly the whole of the mucous membrane of the rectum is superficially ulcerated, and its inner surface is smooth, hard, and without wrinkles. About an inch above the anus, a circular aperture leads straight from the rectum into the vagina. Around the margin of the anus the skin is raised in prominent folds, as if by hemorrhoids, and the orifices of the sebaceous glands are very large. At the orifice of the vagina there are several ulcerated passages beneath the mucous membrane adjacent to the fistulous communication with the rectum. *Hunterian.*

1259. A rectum, from the last four inches of which the mucous membrane has been removed by ulceration. The ulcerated surface is terminated above by an abrupt margin of healthy mucous membrane, and is remarkably smooth and hard. Above the ulcerated part, the mucous membrane appears healthy ; around it, the coats of the rectum, and all the adjacent tissues are, as in the preceding specimen, exceedingly thickened, indurated, and confused ; at one part they form a mass like a thick tumour surrounding the rectum, but they present no other character of cancerous disease. At the lower part, and extending for an inch above the anus, there are numerous short passages and cavities communicating with each other beneath small portions of the mucous membrane, which

extend like bridges over them. Some of these passages appear to have run deeply and irregularly into the thickened tissues around the rectum; none of them open through the skin.

The patient, a middle-aged man, had for some time before death been in the habit of using a rectum-bougie.

Presented by Sir William Blizard.

1260. The lower part of a rectum, with the anus. A bristle is placed in a small and short fistulous passage extending from the skin at the margin of the anus, and within the sphincter muscle, into the intestine just above its lower boundary. The adjacent mucous membrane is very vascular.

Hunterian.

1261. Part of a rectum, vagina, and perineum. Portions of whalebone are placed in a fistulous passage which has a small external opening near the margin of the anus, and extends upwards for an inch and a half by the side of the rectum, becoming wider as it ascends. At its upper part it opens abruptly into the rectum by a short and narrow passage, which is directed at a right angle to the rest of its course. The adjacent tissues are healthy.

Hunterian.

The preparation is figured in Baillie's Morbid Anatomy, Fasc. iv., pl. 5, fig. 1.

1262. The lower part of a rectum, with the anus, at the margin of which are two large hemorrhoids. A portion of porcupine's quill is passed through a small, round, ulcerated aperture in the coats of the rectum into a cavity external to it, which opens by a large aperture in the skin at the margin of the anus. The coats of the rectum are thickened and consolidated with the surrounding tissues.

Hunterian.

1263. Female pelvic organs, placed upside down. About four inches from the anus, a large ulcerated aperture through the walls of the rectum leads forwards by a narrow passage (marked by a piece of whalebone) into the vagina, and sideways by a wide canal into a large irregularly

ulcerated cavity above and behind the broad ligament. The origin of this cavity is uncertain; its interior is in part flocculent, in part bridled, and all the tissues around it are hardened and confused. There is a prolapsus of the uterus and upper part of the vagina. *Hunterian.*

4. *Warts, and other probably innocent Growths, about the Rectum and Anus.*

1264. The lower part of a rectum with a thick ring of lobed and nodulated warts completely surrounding the anus.

5. *Cancerous Growths and Ulceration of the Rectum and Anus.*

" Cancer of the Rectum."

The intestinal canal is subject to many diseases, some of which produce a contraction of the gut at the diseased part, and which produces one set of symptoms common to stricture. The two most common diseases which produce this one effect, viz., contraction, are the cancer and that disease which produces a contraction of the parts. The seat of both these complaints may be anywhere in the track of this canal, but they are more commonly in the rectum than in any other part of it,* and which is most commonly just within the reach of the finger when passed by the anus.

This effect of these two diseases is commonly known to the patient before examination by the smallness of the stool when of a proper consistence; and often it is of various shapes—as, pressed on one side, grooved or flattened, but always of a diminished size.

These two diseases should be well distinguished from one another; for by producing one effect common to both, they are often not considered beyond or further than this common effect, and, of course, often treated very improperly; for if it is a stricture, and is supposed to be a cancer, it then may be neglected as a stricture, and the patient allowed to die; while he might have been cured or relieved, although at the same time the case treated properly under such a supposition: and on the other hand, if supposed to be simply a stricture while it is a cancer, then too much may be done, as I have more than once seen.

As we are to distinguish the cancer from a stricture, it is also necessary we should

* The pylorus is very often the seat of the cancer.

distinguish a cancer from internal piles. However, the first signs of a stricture hardly take place in the piles. A cancer commonly comes on more slowly than the piles: the seat of the symptoms of the piles is lower, having more immediate connection with the act of going to stool, being worse when purging, also coming out in the act of expelling the *faeces*; and they will be different in the feel when examined by the finger.

In the cancer the gut, at the diseased part, is extremely hard, with irregularities projecting into it, sometimes only on one side, often all round, extremely sore to the touch, great pain in going to stool, and often very sore at other times. Ulceration takes place on the inner surface, which is surrounded with those irregular projecting edges, one above the ulcer and one below, the lowest of which, if near enough, can be felt with the finger,—feeling, when the disease goes all round, something like a hard indurated os *tincæ*. This ulceration more or less extends the disease for some way on the gut, and makes the two projecting edges act, as it were, like two valves, one made by the upper projecting irregular edge of the ulcer, the other the lower; and which makes the *faeces* pass with still greater difficulty, especially the upper one.

The internal piles are commonly not placed so high as the seat of the cancer, and are therefore so low as to affect immediately the operation of going to stool, and often pushed out in that operation, and can hardly be returned. To the feel of the finger they are risings irregularly situated in the gut, just at the sphincter, very seldom so hard as the edges of the cancer, and the gut soft at the other places.

However, in some internal piles of long standing I have felt them very hard, as also the gut very firm in texture, but such were of too long standing to be cancerous; and there is a distinguishing mark, which is hardly to be described by words.

In the cancer nothing is to be done but to keep the patient as quiet as possible by opiates, &c.; but opiates commonly cause a costiveness, which is to be avoided; therefore mild laxatives, or clysters of warm water, must be administered as often as occasion requires.

It often happens in a cancer of the gut, especially in the rectum, that towards the last the patient is attacked with a tympanites, the colon shall become extremely distended, so as to distend the abdomen and give great uneasiness. This is known from want of undulation and the sound the part makes on being struck with the finger.

A cancer in the intestine seldom kills of itself: it most commonly kills by producing some other disease, which produces more immediate mischief. Thus, by retaining the *faeces* and the wind, it often kills when the patient might have lived longer from the cancer alone; and therefore the treatment of cancer in the rectum is [or, concerns] not so much the disease itself as the effects it has as a stricture on the bowels above, and therefore the relief is to be administered to them. But the cancer in the rectum often kills by wearing out the constitution, producing hectic. Opiates are what must be had recourse to, but they must be joined with purgatives, as costiveness will destroy of itself. Clysters of opium will give relief, which being joined with water will not so likely render them costive as when taken by the mouth.

In those cases there is often a total stoppage; as this often happens long before the

disease has reduced the patient to the last stage, the patient must be relieved. As this is often mechanical, opiates or any other sedatives cannot produce any good effect, or remove the cause; therefore something mechanical must be attempted. A bougie may be attempted, but it (the canal) will often close again upon withdrawing it; therefore often obliged to have recourse to a pretty large catheter open at the end, which is stopped by a projecting plug for its easy introduction, and then to be withdrawn when introduced through the cancer. This instrument must be continued considerably beyond the lower irregularity felt by the finger, for it is commonly the upper irregularity that makes the stricture, acting like a valve; therefore must go through the upper one, which is going beyond the intermediate ulcer; and the distance of the upper must be ascertained by the flowing of the contents of the gut.

As it is often very difficult to introduce this instrument, it may be often proper to leave it in for some time; for great caution is absolutely necessary to be used in such cases, for violence or irritation of any kind does great mischief to the diseased part.

The few strictures [without cancer] I have felt appeared to me to be only a contraction of the gut, and according to the contraction my finger could be introduced. The gut felt soft, no hardness, and not attended with pain, except when passing a costive stool.

I have been just able in some cases to introduce the tip of the fore-finger: it has apposed [appeared?] to the feel so much like a quick contraction of the gut, that I have conceived it might be divided with a cutting instrument.

The stricture of the rectum [without cancer] can only be treated as a stricture in the urethra, by being dilated with bougies made on purpose; their necessary thickness may be determined by the finger, as also their length.

They will admit of being treated like a stricture in the urethra, and therefore recourse to the bougie must be had. The bougie in common for such complaints need not be above four or five inches long, as that will probably go as high as we can ascertain the disease to be a stricture and its situation, and possibly as high as we can conveniently pass one. Their thickness must suit the size of the contracted part. Probably the stricture may have become so close as not to admit the point of the finger before they have applied for relief, which I have felt.

A bougie, about five inches long and half an inch thick at the thick end, tapering very gradually to the other, may, in common, be of a proper size; and these must be left in as long as the sensibility of the parts will admit, and their frequency to be guided by the same rule, till sufficiently dilated, which will be known by the patients themselves; but as this practice will be attended with considerable inconvenience, the patient will be apt to leave it off upon the least amendment; therefore it may be proper to keep them longer than they otherwise would. As it is a disease, too, that will be apt to recur, the patients should be put on their guard, and have recourse to the bougie occasionally.—*Hunterian MS., Cases and Observations.*

1265. Part of the rectum of an ox with a section of a large, and probably medullary cancerous, tumour growing between its coats and projecting

far into its cavity. The tumour appears to have been developed in the submucous tissue, for at its upper part a thin layer of mucous membrane is continued over its surface. The fasciculi of the circular fibres of the muscular coat are separated at the base of the tumour; they are also elongated, and many of them appear to be continued for some distance into its substance. The tissues external to the muscular coat are thickened and consolidated. The lower part of the tumour has sloughed and is deeply ulcerated. *Hunterian.*

1266. The other part of the same rectum with a similar section of the tumour. *Hunterian.*

1267. Portion of rectum with a broad, slightly elevated, soft, and spongy, cancerous growth in its mucous membrane. The surface of the growth is flocculent and shreddy; its texture gradually merges into that of the surrounding healthy mucous membrane; at one situation it is smoothly ulcerated. The growth occupies nearly the whole circumference of the intestine. *Hunterian.*

1268. Portion of rectum, in which a tumour like that last described, but larger, is deeply and unevenly ulcerated, so that little remains except its elevated sinuous margin and obscurely fibrous base. The walls of the intestine are thickened, and on its exterior the tissues adjacent to the tumour are indurated and contracted. *Hunterian.*

1269. Portion of rectum with the urinary bladder and other adjacent parts. At the level of the prostate gland, and extending for nearly three inches upwards, is a deep irregular ulcer, much like that last described, which has destroyed the greater part of the walls of the rectum, and near its centre has penetrated the urinary bladder forming an aperture through which a piece of bougie is passed. External to the rectum, the tissues adjacent to the ulcer are indurated and contracted. Around the aperture in the bladder, which is situated in the middle line just above the ureters, there is a flat soft tumour, nearly two inches in its greatest diameter, of

an obscurely fibrous structure; and an inch higher on the wall of the bladder is another tumour of similar aspect, but of smaller size. With these exceptions the bladder appears healthy. *Hunterian.*

1270. A rectum and bladder between the cavities of which a wide communication has been formed by cancerous ulceration. The apertures in both organs are ragged, shreddy, and irregular. A growth, apparently of a carcinomatous texture, extends into the posterior part of the bladder; and a similar growth occupies one side of the rectum and nearly fills its cavity. The posterior wall of that part of the rectum which lay in the hollow of the sacrum is nearly destroyed.

Presented by Sir William Blizard.

1271. Parts of a rectum and of some of the adjacent organs. Rather more than an inch above the anus, a broad transverse band of deep ragged ulceration has destroyed the mucous membrane of the rectum. The margins of the ulcer are elevated, and partly covered with flocculent and leaf-like cancerous (?) growths. Above and below the ulcer, the surface of the mucous membrane is wrinkled, seamed, and depressed, and around it all the tissues are thickened, indurated, and confused. The prostate gland and neck of the bladder are closely adherent to the exterior of the rectum opposite the ulcerated part.

The patient died with great distension of the intestines; and the fæces could not be discharged, though the canal of the rectum was not much contracted.

Presented by Sir William Blizard.

1272. A portion of rectum, on the inner surface of which is a large shaggy cancerous ulcer. The central part of the ulcer has penetrated through the rectum deep into the tissues which are adherent and condensed around its posterior wall. The coats of the intestine are thickened and indurated. *Hunterian.*

1273. The rectum of a patient of whose case Mr. Hunter left the following record:—

"The case of the Bishop of Durham, with the appearances after Death.

"His Lordship had, about ten years ago, the piles, for which he took Ward's Paste, and was cured. Near ten years after (probably about the year 1790), he was taken with a complaint in the anus; blood and slime came away with his stools, which often passed with great difficulty, especially when costive, and often attended with considerable pain in the part. The loss of blood was so considerable at last as to appear in his countenance.

"In the summer, 1790, he became extremely debilitated, loss of appetite, want of rest, quick pulse, and his legs began to swell. Dr. Blane attended him, and Dr. Warren was called in. As the symptoms attending the stools expressed considerable disease somewhere in the gut, and as the pain expressed it to be the rectum, it was proposed he should be examined, and Mr. Earle was applied to, who examined him with the finger, but could not find anything uncommon. I was next sent for (I think, in August), and immediately, upon introducing my finger up the rectum, near three inches, I felt a rising, forming a ridge, which went round the gut obliquely, like a ring, was harder or firmer in consistence than the other parts; over which I could just pass my finger.

"This was so familiar a feel to me, that I at once pronounced it to be what is commonly called a cancer. Opiate and cicuta clysters were given, to keep the parts in as easy a state as possible; and such food and medicines as the effects of the disease had on the constitution were thought proper for, without attempting a cure, were administered, and the disease went on.

"Dr. Hugh Smith was called in, and when I told him what I felt upon examination, and what my opinion was of what I did feel, he then gave up hope of being able to do any good. However, upon a supposition that I might be deceived, and as he had seen great good from mercury in diseases of the rectum, in what he conceived to be pile-cases, he ordered Ward's White Drops; but, after a short trial, it disagreed with his stomach, and he left it off for that time. Upon the leaving off this medicine he became rather easier, less blood and slime came away, and the swelling in his legs abated; but as he was then taking nothing, no particular stress was laid upon it by himself or friends, and, as I did not suppose it possible for him to get well, no stress was laid on it by me. This, however, lasted about ten days; and it was this time when the family were importuned to have Taylor the cattle-doctor to attend him, and I was asked to examine this doctor, to see whether it was likely he should do mischief or not. Upon examination it appeared to me that his medicines could do no harm, and he sent his medicines, which I was desired by the family to apply according to the account or mode given by Taylor. This was done accordingly, and now great attention was paid to the ease or abatement of the symptoms; which still continuing, the mind of the patient, as well as those of his friends, forgot the former ten days, and dated the time of ease from the application of Taylor's medicine.

"Taylor was now informed of what had been done; he went on for about two months, taking occasionally opium as much as the symptoms seemed to require; so that opium was not objected to as interfering with his medicine. The ointment intro-

duced into the anus was now left off, and only the sacrum and loins rubbed with a liquid, which appeared to be oil of origanum dissolved in spirit of wine, and this he went on with for many months. All this time the accounts we had of his health were that he was better, sometimes that he was cured, &c.

"Most of this time his appetite was certainly better, slept better, his excrements passed easier, less blood and slime, although there was often a good deal of both. With all these accounts of his recovery, yet he did not get flesh, although he and they were in hopes he did; for the confirmation of which his barber was applied to, who thought it was necessary he should say he thought his cheeks plumper. He became so weak at last as to be hardly able to sit, and fell off his night-table and bruised himself; and about eight or ten days after he died, which was in May, 1791, about ten months after I saw him.

"Of the appearances upon opening the body of the Bishop of Durham.

"On examining the contents of the abdomen, the whole viscera or contents of that cavity were perfectly sound; but the parts below, contained in the pelvis, where the symptoms were when living (viz., the last bowel), were in a diseased state.

"The whole inner surface of that bowel, from within an inch of the external parts to about five inches up, made one broad ulcer, terminating in a ridge below, as also at the upper part; and the ulcer between these two ridges was ragged and spongy.

"On that surface of the gut next to the bladder the gut was entirely gone, being ulcerated away, and the bladder on that side exposed. And it had likewise ulcerated higher up the gut, where there was no natural union of parts, and of course would have communicated with the cavity of the belly, if some adhesions had not taken place above, which prevented the contents of the bowels getting into that cavity, which would have proved fatal in a very short time. The surrounding parts of this ulcer were hard, or what is commonly called callous, almost as hard as gristle, by which means the gut was firmly attached to the surrounding parts.

"These appearances were the only diseased parts; for in other respects I never saw one more free from disease. That they had increased is evident, for when I examined his Lordship last the lower edge of the ulcer was near three inches high, but now it was hardly an inch; and we may suppose the upper ridge also went higher.

"His Lordship at first, as has been observed, had great difficulty in passing his stools, which was owing to these two ridges being nearer to each other, and higher or thicker; but, as ulceration went on, or as it spread, these parts were removed, so that the intestine here, instead of being contracted as at first, was now enlarged, so that the contents of the bowels came away more easily, which was very conducive to his Lordship's ease.

"As there were no lymphatic glands diseased, how far was this disease to be reckoned cancer?"—*Hunterian MS. Cases and Dissections*, No. 58.

1274. Portion of a rectum, with the urinary bladder and other adjacent parts.
For about two inches above the level of the prostate gland, nearly the

whole of the walls of the rectum are destroyed by an ulcer, which has an abrupt, sinuous margin, and parts of the walls of which appear to be formed of masses of medullary cancer. Its base is formed of the tissues between the bladder and rectum, thickened and indurated; but it has at one part extended into the bladder by an aperture (indicated by a piece of glass) between the ureters. Above the disease the rectum is greatly dilated.

From the Museum of John Howship, Esq.

1275. A rectum, with part of the colon, the uterus, ovaries, and other adjacent parts. Between four and five inches from the lower border of the rectum, there is a large and deep circumscribed ulceration of its coats, the consequence of medullary cancer. The canal of the intestine at this part is much contracted, both by the disease of its coats and by the growth of large medullary tumours around it. The right ovary is enlarged so as to form a cyst nearly three inches in diameter, which is filled with soft medullary matter. The left ovary and uterus are healthy; as are also all the coats of the intestine both above and below the circumscribed ulceration already described.

The patient was an unmarried woman, forty-two years old, who had signs of disease of the rectum for nearly three years before her death. Shortly before her death rupture of the cæcum took place, in consequence of the distension produced by the faeces, which had been for a long time accumulating above the diseased part of the rectum. A more detailed history of the case is given in Mr. Langstaff's Catalogue, p. 252.

From the Museum of George Langstaff, Esq.

1276. A portion of rectum, inverted. Its mucous membrane, through six inches of its length, and in its whole circumference, is completely covered with close-set, fine, branching filaments, so that it looks like the flocculent surface of a chorion. The filaments are from a line to half an inch in length: the adjacent mucous membrane, and that to which they are attached, appear healthy. At one part there is a large irregular aperture in the wall of the intestine, but it has the appearance of having been torn rather than ulcerated.

From a person who had an artificial anus in the left groin for thirty years before

he died. It had formed in consequence of the mortification of a hernia of the sigmoid flexure of the colon; and the end of the intestine below the artificial anus was completely closed, so that for thirty years no fæces had passed through the rectum. The disease which is shown in the preparation appeared, however, to be the chief cause of death. The artificial anus is preserved in No. 1387.

Presented by William Lawrence, Esq.

6. *Hemorrhoids: Enlargement and other Diseases of the Hemorrhoidal Veins.*

1277. "A pile" [*Hunterian MS. Catalogue*]. One surface of the specimen exhibits the mucuous membrane of the rectum: from the other, all the tissues have been removed, so as to expose numerous small varicose dilatations of the branches of the hemorrhoidal veins, some of which have firm round clots of blood within them. The dilatations of the veins are so partial, that, as the undilated portions by which they communicate are not all exposed, many of them appear like isolated sacs containing clots of blood.

Hunterian.

1278. A circle of hemorrhoids, removed during life from the margin of an anus.

Referring to this preparation, and probably having in view the careful dissection shown in that last described, Mr. Hunter wrote the following:—

" Observations on Piles."

" The piles would appear to be principally increased veins or varicous veins, making, from their enlargement, a body somewhat similar to the glans penis, or plexus retiformis; but, as the piles are a disease, they of course differ in every other respect. The motion of the blood is not so free through them, owing to the contraction of the sphincter ani, therefore they are not so compressible, and which often makes them extremely hard. But the most singular thing is, the blood often coagulating in them. This was the case with Mr. Soleman (who had one continued ring round the anus); for, when cutting them off close to their roots, the blood was found coagulated in each vein, which stuck out on the cut surface like so many small knobs, while the soft natural parts shrunk in their interstices. These coagula were almost as close to one another as they could possibly be, passing almost directly out towards the pile, and therefore were cut almost directly across. This appearance I have often seen in others, that were removed by operation."—*Hunterian MSS., Cases in Surgery*, p. 443.

1279. The lower end of a rectum, with the margin of the anus. A prominent transverse fold of the mucous membrane of the rectum, an inch and a half in length, and half an inch above its anal margin, has been produced, probably, by hemorrhoidal enlargement of the subjacent veins; and, besides this, the mucous membrane is in several places elevated by similar enlargements of the veins, of which sections are shown at the cut edges of the intestine. All the dilated veins here cut across are filled with hard and compact clots of blood. The whole margin of the rectum is thrown into a fold like that above mentioned, but thinner and less prominent.

Hunterian.

1280. The lower part of a rectum, with large hemorrhoids around the margin of the anus. The hemorrhoids are nearly separated into two rows (the smaller ones lying above the larger), by a constriction extending round the rectum at the situation of the lower margin of the sphincter ani.

Hunterian.

1281. The lower end of a rectum, exhibiting numerous minute circumscribed depressions, perhaps ulcers of its mucous membrane, and fringes of minute growths. Below this, and near the anal margin, the mucous membrane is raised in several prominent longitudinal folds by hemorrhoids; and below these, separated from them by a constriction like that above mentioned, there is another row of smaller hemorrhoids at the very margin of the anus.

Hunterian.

1282. Part of a rectum and an anus, the margin of which is surrounded with hemorrhoids.

Hunterian.

1283. The lower end of a rectum, with the anus, the margin of which is surrounded with hemorrhoids. Above the hemorrhoids, the mucous membrane of the rectum is ulcerated and irregularly wrinkled; elsewhere it is healthy.

Hunterian.

1284. The lower part of a rectum, with the anus. The coats of the rectum are

thickened and consolidated with the surrounding texture. Its cavity is contracted, and is further reduced by prominent folds of mucous membrane, which probably cover hemorrhoidal enlargements of its veins. Around half the margin of the anus are hemorrhoids covered with thin and slightly excoriated skin.

The patient had continual diarrhoea.

Hunterian.

1284A. The lower part of a rectum, with hemorrhoidal tumours both within and beyond the margin of the anus. Part of the mucous membrane between and upon the hemorrhoids is ulcerated and ragged; two inches above the anus also there is an oval aperture, with smooth thin margins, leading through the mucous membrane into a small cavity between it and the muscular coat. The cut edges of the preparation exhibit sections of clots of blood in the dilated parts of the hemorrhoidal veins. *Hunterian.*

Other specimens of diseases in or involving the rectum and anus:

Nos. 188, 1134, 1205, 1977, 1996, 1998, 2017, 2032, 2489, 2653, 2739, 2740.

SERIES XXV.—ANATOMY OF HERNIÆ, OR PROTRUSIONS AND OTHER DISPLACEMENTS OF THE INTESTINAL CANAL AND OMENTUM.

Section I. ANATOMY OF HERNIÆ IN GENERAL.

a. Of the Hernial Sac.

1285. "The internal orifice of a hernial sac, to show its valvular appearance." (*Hunterian MS. Catalogue.*) The appearance is due to an annular thickening of the peritoneum nearly limited to the margin of the mouth of the sac, which is thus reduced to a much less diameter than any other part of the sac. *Hunterian.*

1286. An inguinal hernia, of which the sac is contracted at the middle, so as to be nearly divided into two parts. Both its cavities contain omentum.

Mr. Hunter has left the following account of the preparation:—

“ *Winter, 1763.*—We dissected a man who had a rupture of a particular kind, a sort of double rupture on the same side, and in the same passage, and in the same sac. It appeared to me as if produced at two different times: that the man had a small inguinal rupture for some time, the contents epiploon, and that the mouth of the sac had contracted a good deal, so that no return of the epiploon could be brought about. While in this state a second or new cause took place; and instead of dilating the old sac, by pushing into it more epiploon, it pushed down the old sac, and a new elongation of the peritonæum followed; so that here was a kind of second rupture produced. This last was by much the largest.

“ It appeared at first to be two distinct bags; but there was the first contraction of the sac which kept up the communication between the two: and the epiploon passing through, forming a small neck there.”—*Hunterian MS. Dissections of Morbid Bodies*, No. 71, p. 101. See also the description and history of No. 1291.

1287. An inguinal hernial sac, with the testicle, dried after the injection of their blood-vessels. The cavity of the sac is partially divided by a transverse crescent-shaped fold, or partition from its posterior wall, which may have been formed and protruded like the more nearly complete partition in the preceding case.

From the Museum of Sir A. P. Cooper.

1288. A large inguinal hernial sac, with shreds of false membrane attached to the upper part of its inner surface. At its lower part, the sac divides (as by branching) into two pouches of equal size, of which one lies behind the other.

Hunterian.

1289. An inguinal hernia, in which both the sac and its coverings are thickened and indurated. They are partially separated into layers; together, they are from one-sixth to one-fourth of an inch in thickness; the interior of the sac is corrugated, and soft films of lymph are deposited upon it. The testicle is placed below the sac; the surfaces of the tunica vaginalis are adherent together, and consolidated with the surrounding tissues.

From the Museum of Robert Liston, Esq.

1290. The sac of a femoral hernia, with some of the adjacent parts. The sac is uniformly thickened, and its neck is closed; a layer of tissue, nearly half an inch in thickness, intervenes between the part of the sac which remained as a closed cavity in the groin, and the depressed and wrinkled peritoneum lining the internal orifice of the crural canal.

From the Museum of Robert Liston, Esq.

1291. The parts concerned in a femoral hernia, operated on by Mr. Hunter, who left the following record of the case:—

“ Femoral Rupture in a Woman.

“ June, 1782.—A woman came into St. George’s Hospital with a strangulated femoral rupture. She had had formerly the same disease in the same part; but it had been reduced, and she afterwards had no further trouble with it till now.

“ After every attempt to reduce the present rupture, and failing, the operation was thought to be absolutely necessary.

“ When the tumour was laid bare, and Poupart’s ligament exposed, I divided the ligament from without, that I might return the contents of the sac without cutting into it: but I found still that the contents would not move. I then made a wound into the lower part of the sac, which appeared there to contain some fluid; and when this was exposed, it proved to be a circumscribed cavity; and that the present hernia was the upper part of the tumour.

“ I did not open into the recent sac, which contained the protruded part, but attempted to take off the remaining stricture, for it only consisted of the cellular membrane, &c., that line the parts behind Poupart’s ligament. When this was divided the contained parts easily slipped up into the abdomen. The wound was dressed with a pretty thick compress of lint, to press the two sides of the sac together, that they might adhere.

“ She became extremely low; a kind of cold sweat came on: she took some cordials, a gentle opiate to prevent the necessity of acting, and a clyster of warm-water to soften, warm, and soothe the bowels: but, about six hours after, she died.

“ On opening the body I observed the following appearances:—The piece of gut which had been down into the sac, was the ileum, near to the cæcum. The quantity was just so much as took up the diameter of the gut. It was of a darker colour, and appeared to be more pinched at the part inclosed by Poupart’s ligament than where it had got below into the sac: this part adhered to the mouth of the sac by a slight adhesion, viz., that formed in the six hours; therefore not mortified.

“ The intestines above the strictured part were distended; below, they were of the natural size.

“ There was not sufficient visible cause for the woman’s death.

“ The case had been the following:—She had had formerly a rupture in the same part, which had been reduced, but not the sac, and the mouth of the sac had united,

while the sac itself had continued separate: but a new effort, or strain, taking place, a new rupture was produced at the same part, and the old sac was pushed down further into the thigh."—*Hunterian MS. Cases in Surgery*, p. 473; and *Cases and Dissections*, No. 56.

The preparation shows the small, recently protruded but not opened, hernial sac in the usual situation of a femoral hernia, with the larger closed old sac below it, and two or three smaller closed sacs near its sides. The mouth of the recently protruded sac is shown at the back of the preparation; and, about an inch from it on its outer side, directly over the femoral vessels, there is an appearance of another small peritoneal protrusion.

1292. The portion of intestine which was returned in the operation described above. *Hunterian.*

1293. Part of the anterior wall of an abdomen, with a left inguinal hernia. It appears that in an attempt to reduce the hernia, the sac was pushed back, with the intestine in it tightly strangulated by its neck. The sac, which is pyriform, and nearly three inches in its chief diameter, is now placed on the outer side of the internal ring, between the abdominal and iliac muscles and the peritoneum, part of it lying below the crural arch, and extending outwards nearly as far as the external iliac vessels. The sac thus forms a large tumour projecting inwards towards the abdominal cavity, but is not discernible anteriorly: it is laid open from behind, and contains dark coloured small intestine. The external inguinal ring is large, and so also is the spermatic cord.

The patient, a stout man, fifty-three years old, had a hernia many years, but, always wearing a truss, had suffered little inconvenience from it, and never had difficulty in returning it, till one day, when, without evident cause, it became tense and painful. It appeared to be completely reduced by his surgeon, but the signs of strangulation increased, and on the fifteenth day from their commencement he died.*

From the Museum of John Taunton, Esq.

Other Specimens of Peculiarities in the Anatomy of Hernial Sacs:—

Nos. 1303, 1307, 1318, 1325 to 1329, 1335, 1343, 1355 to 1358.

* A similar but very incomplete example of reduction *en masse* is shown in No. 1307. See also the history of No. 1336.

b. Of the Contents of the Hernial Sac.

1294. Portion of small intestine and mesentery, a part of which was strangulated in a hernia, and retains the constricted appearance derived from the pressure of the neck of the sac. Many shreds of lymph are upon its surface. *Hunterian.*

The preparation is engraved in "Baillie's Morbid Anatomy," Fasc. iv., pl. vii. fig. 3.

1295. A similar specimen. *Hunterian.*

1296. Portion of small intestine, part of which was returned from a strangulated congenital hernia, thirty-seven hours before death. The strangulation had existed seventy-two hours. The constriction is still evident, and the canal of the intestine would only admit a finger, although the patient had many liquid evacuations after the operation. The mesentery is much thickened, and lymph is thinly deposited upon the surface of the intestine.

From the Museum of John Howship, Esq.

1297. Part of a jejunum, a portion of which was strangulated in an umbilical hernia, and was reduced, probably not long before death. The extent of the strangulated portion is distinctly shown by the blotches of congestion and ecchymosis in and beneath its peritoneal coat; these marks are definitely circumscribed by a broad, red line, just within which the chief effect of the stricture appears to have fallen. All the coats of the intestine and the adjacent part of the mesentery are thickened; and the peritoneal coat is covered with fine shreds of lymph.

From the Museum of John Howship, Esq.

1298. Portion of small intestine, about eighteen inches long, which was strangulated for twenty-four hours. It is dark coloured, and distended; there are numerous shreds of lymph upon its peritoneal surface, but no distinct marks of constriction. *Hunterian.*

1299. The parts concerned in an inguinal hernia on the left side of a woman. The sac is oval, elongated from above downwards; the several layers of its walls are confused. It contains a portion of jejunum adherent over nearly all its surface, and so closely strangulated, that none of the fluid has passed into its vessels, which has been minutely injected into those of the intestine remaining within the abdomen.

From the Museum of John Howship, Esq.

1300. Portion of the intestine of a child, from a strangulated umbilical hernia. It is said to have been wounded in an operation to reduce it: but the form of the aperture in its coats,—which is small, oval, with evenly circumscribed and abrupt thin edges, without protrusion of the mucous membrane,—makes it more probable that it was perforated by ulceration or sloughing. Its peritoneal surface is thinly covered with lymph.

From the Museum of Sir A. P. Cooper.

1301. Portion of small intestine, part of which was strangulated in a hernia. Sloughing appears to have taken place on one of its surfaces, where its coats are very thin and perforated.

Hunterian.

1302. An unreduced strangulated femoral hernia. The sac, of which the walls are much thickened, has been laid open: it contains a loop of small intestine with omentum. At the back of the preparation, the contraction of the intestine before the strangulated part, and the dilatation of that behind it, are well shown.

The following account of the case was left by Mr. Hunter:—

“ The case of Mr. Thomson’s Woman, who died of a Rupture.

“ Mrs. —, aged thirty-five, had a rupture for several years, but it was occasionally reduced, though often with difficulty. At last she was attacked with it so severely that she could not reduce it herself, and sent for Mr. Thomson, surgeon, who found her with all the symptoms of a strangulated gut.

“ He attempted to reduce it; but at first could not. It was fomented, and the smoke of tobacco was thrown up by the rectum. Cold sweats, a small quick pulse, and hiccough came on: at last he reduced it, but the symptoms did not in the least abate, and the straining with the vomiting produced the rupture again, which now became out of

his power to reduce. He proposed an operation, but she would not consent to it. She died, and was opened.

"On opening the belly, there was found a large quantity of the contents of the intestines lying loose in the cavity of the belly. On examining further, a portion of the ileum, and a small portion of epiploon, were found down in the hernial sac; and upon examination it was found that the same gut which had come down at first, was not down now; and the gut which had been down first, and reduced, was (also) the ileum, which I found so much mortified as to have given way in some places, forming several holes in it, through which had flowed the matter which was found in the cavity of the belly.

"Here was a complicated case beyond all relief; for if the second rupture had not happened she must have died; and, of course, if the operation had been performed for the second rupture, she would also have died of the consequences of the first.

"This case shows that when the symptoms of the rupture have gone very far, that it is imprudent to reduce it, even if possible: but as it is impossible, perhaps, to tell when the mortification of the gut is gone too far for reduction, it will, in general, be attempted while life exists, with the hopes of a cure.

"Upon the other hand it may be asserted, or supposed, that if it is not reduced, that the person must also die; but this is not so certain as the other; for the mortification of a gut simply does not kill: it only kills from its consequences; and there is a material difference between a mortified gut out of the belly and one within. The consequence of one within is absolute death; but the one without in general endeavours at a cure, by producing inflammation and suppuration in the parts, which is producing a fistulous orifice, or artificial anus.

"It is very curious to observe in hernias, that while the gut is in the sac, and alive, no inflammation takes place on the sac or integuments; but the moment the gut becomes mortified or dead, the stimulus of an extraneous body takes place immediately: an outlet is then endeavouring to be made by the inflammation and suppuration of the sac, forming an abscess in it; which matter, with the contents of the gut, is brought to the skin. While this is going on, the sound gut within the abdomen, where it passes into the rings, adheres to those rings all round; so that when the abscess is formed, burst, or opened, and the mortified parts sloughed off, these ends of the gut open into the abscess, and not into the cavity of the belly.

"But although Nature is doing all this, yet she is seldom able to succeed; for the stricture which was the cause of strangulation and mortification remains so tight as hardly to allow a passage for the contents of the intestines. Perhaps it might be proper, even then, to dilate the rings."—*Hunterian MS. Cases and Dissections*, No. 53.

1303. The sac of an inguinal hernia, with the adjacent parts, and a portion of small intestine which, probably, was returned in an operation. The intestine (suspended above and separate from the sac) appears to have been constricted in only a part of its circumference, and has mortified;

there is a considerable aperture in its coats, which is surrounded with thin flakes of lymph. The sac, of bilocular form, is contracted; all the tissues around are thickened and consolidated with it, and it is lined with lymph. The external ring has been divided, and a ligature tied on something at its side.

The following case from the Hunterian MSS. corresponds closely with this preparation:—

“ Hernia.

“ Mr. Roberts, watchmaker, had an inguinal hernia for many years, and wore a truss. It became so well that he often left the truss off.

“ Tuesday, July, 1774, he was attacked with a vomiting, and a protrusion took place, with all the signs of a strangulated gut, although not very violent: for, although sick at stomach, he did not vomit. On Wednesday I saw him; no passage by stool could be procured. The appearance was very small, only about the size of the end of the thumb, which terminated all at once; but from that downwards the spermatic chord seemed thickened. The parts were so tender that he could hardly allow one to touch them. It did not give way to any of our attempts.

“ On Thursday, much the same; the pulse kept strong.

“ On Friday I thought I had returned the part, for it had lost the sudden termination at the lower part, and only appeared to be a thickening of the spermatic chord, and thought we could feel the ring open and free. I imagined that I could get in my finger for a little way. The pulse kept strong, but he was extremely ill all day, and had no passage.

“ In the evening the pulse had lost considerably of its strength; was become small and quick: he was much oppressed. It was now plain that all was not right respecting the rupture, and I was now for performing the operation; but he declined it.

“ I saw him at six o'clock, found him very low, his hands extremely cold, and alarming pulse, hardly to be felt; and but little pain in the part, even upon pressure: and he could hardly draw his breath, excepting when he did it by force.

“ Mr. Hawkins was sent for, and we were of opinion the operation should be performed, although but little could be expected from it. It was performed about eight o'clock; a small bit of gut was found in the sac; just as much of the gut as took in its breadth, so that there was a total stoppage. The moment the stricture was cut through the contents of the gut above rushed down, and burst the part which lay within the sac. The parts were left in this situation, and dressed. He died at five in the evening.

“ Observations and Queries on this Disease and Operation.

“ To what was the deception owing? for there was certainly a decrease and change in the feel of the parts: was it owing to the protruded gut being (at) first full, and, by squeezing, its contents had passed the stricture, and got into the gut within the belly; and, therefore, the gut when alone appeared like a thickening of the chord?

How was it that we thought we could feel the ring, and that we could introduce a finger into it? Was it that the gut was softer there, and the ring felt hard all round, although there really was no passage? or was it that the inflammation below and close to the rings gave the feel of the ring; and the other part of the sac being natural, allowed of its being pushed into it, and caused the deception?"—*Hunterian MS. Cases and Dissections*, No. 68.

1304. Portion of ileum, which was tightly constricted (probably in a hernia) and burst through a large oval aperture, nearly an inch above the seat of constriction. The intestine above the constriction is large and flaccid; it was probably burst by over-distension. *Hunterian.*

1305. Portion of small intestine, which was strangulated in a hernia, and was burst, probably in an unsuccessful attempt to reduce it. A rent extends round half the circumference of the intestine; its edges are not ulcerated, nor do they appear much altered in texture. The marks of constriction are evident.

Presented by Sir William Blizard.

1306. Portion of small intestine, which, in consequence of its extreme distension with air, could not be reduced from a hernial sac in which it was strangulated. An oblique incision, an inch in length, was therefore made into it, and it was left in the sac. Its surface is covered with lymph and false membrane.

From the Museum of Sir A. P. Cooper.

1307. Portion of small intestine, with the inguinal hernia in which it was strangulated. The part strangulated just includes the whole circumference of the intestine: it was so completely filled with the portions of the skin of an apple or potatoe, which now lie below it, that it was impossible to return it. In the efforts at reduction, part of the neck of the sac and of the peritoneum round its mouth was separated from its connections, and pushed into the abdomen.

Presented by Sir William Blizard.

1308. A small hernial sac, with omentum adhering to its neck and inner sur-

face. The contrast between the healthy omentum above the sac, and that which is thickened and indurated within it, is well shown.

Hunterian.

1309. The sac of an inguinal hernia, with a portion of omentum adhering firmly to its neck by several strong thick bands of false membrane. The omentum at the adherent part, (but not elsewhere,) is thickened and indurated.

Hunterian.

1310. A large inguinal hernial sac, containing indurated omentum, which in several places is adherent to its walls by strong and well formed bands of false membrane.

Hunterian.

1311. Portions of omentum, from a case of strangulated oblique inguinal hernia. The lower and larger portion, which is much thickened and indurated, was removed in an operation; the upper, with the ligatures applied on its chief blood-vessels, was removed after death.

The patient was seventy years old, and had the hernia fifty years. Strangulation had existed twenty-nine hours, when the operation was performed. The omentum removed was adherent. Death took place on the seventh day after the operation, from sloughing of the wound, and diffuse inflammation of the cellular tissue extending over the ilium to the loins.

The patient had double hydrocele: preserved, together with the hernial sac, in No. 2335.

From the Museum of R. B. Walker, Esq.

Other Specimens illustrating Peculiarities of the Contents of Hernial Sacs:—

Nos. 89, 1292, 1326-7, 1332-4, 1346, 1354.

SERIES XXV.—Section II. ANATOMY OF PARTICULAR FORMS OF HERNIA.

A. *Anatomy of the parts concerned in Inguinal Hernia.*

1312. The right inguinal region of a man, dissected and dried after the injection of its vessels, to display the parts concerned in inguinal hernia. The aponeurosis of the external oblique muscle has been divided near its lower

margin, and nearly parallel to it; and its two portions are widely separated, the external inguinal ring being preserved entire. The lower margin of the internal oblique is shown, and, with that of the transverse muscle, is raised up, after being separated from its attachments to the crural arch. The fascia transversalis, and the internal inguinal ring, are thus shown. The vessels of the spermatic cord, also, are shown resting on the lower and inner margin of the internal ring, and passing through the inguinal canal and external ring to the testicle. The epigastric vessels are seen behind the fascia transversalis ascending obliquely near the inner margin of the internal ring; and below the crural arch are the trunks of the femoral artery and vein, the anterior crural nerve, and two sets of lymphatic vessels injected with mercury. At the back of the preparation, the epigastric vessels are shown more clearly; here also are shown the cremasteric and pubic branches of the epigastric artery; and the vas deferens separating from the spermatic artery and veins.

From the Museum of Sir A. P. Cooper.

1313. The corresponding parts from a female, similarly prepared. The muscles, fasciæ, and rings are shown in nearly the same relations as in the last specimen, but the peritoneum is here preserved; and connected with it, but not communicating with its cavity, is a long slender pouch, or sacculus, which lies in the inguinal canal, and is connected with the round ligament. The femoral blood-vessels and lymphatics are shown, as in the last specimen. The circumflex iliac vessels are also shown.

From the Museum of Sir A. P. Cooper.

- 1313A. Parts of the muscles and aponeurosis of an inguinal region, with the spermatic cord, dried. The transverse muscle is that which is chiefly shown: a few of its lowest fasciculi pass transversely behind the cord, others are directed behind, but in their course are a little arched downwards; others more arched can hardly be distinguished from those of the cremaster.

From the Museum of Sir A. P. Cooper.

1314. The parts concerned in inguinal hernia, from the left side of a robust

man. The skin, superficial fascia, and aponeurosis of the external oblique muscle are turned downwards; the sheath of the rectus muscle is laid open; and a portion of the lower border of the internal oblique has been cut from its insertion, and is turned downwards by the outer side of the spermatic cord. The inner half of the lower border and the insertion of the transverse muscle are shown, and a bristle is placed under two small fasciculi of muscular fibres, which pass in the same direction as those of the lower border of the transversalis, but lie behind the spermatic cord. Fasciculi of the cremaster are shown, in connection with that portion of the lower border of the internal oblique which is turned downwards and outwards; others are reflected inwards in a layer of cellular tissue from the front and inner surface of the spermatic cord; others, also, having their origin on the crural arch, behind, and on the outer side of the cord, pass behind the cord inwards and downwards, along its inner margin.

Presented by G. J. Guthrie, Esq.,

By whom the preparation is described and engraved in a treatise "On some points connected with the Anatomy and Surgery of Inguinal and Femoral Hernia," London, 1833, pl. i.

1315. Some of the blood-vessels concerned in inguinal hernia, injected and dried, with the adjacent parts. The epigastric artery is shown ascending near the inner margin of the internal ring, and giving off the cremasteric artery, which descends with the spermatic vessels and the vas deferens. Above the cremasteric artery, also, two small arteries are given off from the epigastric, and run inwards nearly parallel with the lower border of the tendon of the internal oblique and transverse muscles.

From the Museum of Sir A. P. Cooper.

B. *Inguinal Herniæ.*

a. *Incomplete Inguinal Herniæ.*

1316. The parts concerned in an incomplete oblique inguinal hernia, on the left side of a man. Part of the aponeurosis of the external oblique muscle

has been cut away from the crural arch, and turned upwards; and the lower margins of the internal oblique and transverse muscles are raised to expose the hernial sac, which has descended through half the inguinal canal. The external inguinal ring is left entire. The femoral vessels, also, are shown in front, with the obturator artery given off by a short common trunk with the epigastric. At the back of the preparation, the epigastric artery is dissected out, as it passes under and on the inner side of the neck of the sac and the internal ring.

From the Museum of John Howship, Esq.

1317. An injected and dried preparation of part of the left inguinal region of a woman, with an oblique inguinal hernia in the canal. The canal is not laid open; the hernial sac fills and enlarges the canal, and extends to the external ring; a part of the round ligament projects from it. The epigastric artery and veins are shown, passing obliquely upwards on the inner side of the internal ring, and the circumflex iliac vessels, passing outwards near its outer border. Two sets of lymphatic vessels are injected on the inner side of the femoral artery and vein; and a lymphatic gland is attached to the aponeurosis of the external oblique muscle near the external ring.

From the Museum of Sir A. P. Cooper.

1318. A similar preparation, from a woman, showing some of the relations of an inguinal and a femoral hernia on the right side. Both the herniæ are small. The inguinal hernia has only reached the external ring; it is exposed by the division of the aponeurosis of the external oblique near its lower border, and by the raising of the lower margins of the internal oblique and transverse muscles. The vessels are shown in the same relation as in the preceding specimen. The sac of the femoral hernia is exposed by the removal of all its coverings; the epigastric vessels are seen passing above and to the outer side of its mouth, as they wind below and on the inner side of the mouth of the sac of the inguinal hernia.

From the Museum of Sir A. P. Cooper.

b. Oblique Inguinal Herniæ.

1319. The parts concerned in a small oblique inguinal hernia on the left side. The sac has just passed through the external inguinal ring, where it forms a small globular tumour, with broad fasciculi of the cremaster muscle on both its inner and its outer surface. The enlargement of the external ring, the swelling in the oblique course of the inguinal canal, and the obliquely placed mouth of the sac, with the vas deferens at its lower margin, are well shown. Part of the epigastric artery, turning round the under and inner part of the mouth of the sac, is dissected out; the obturator artery is derived with it by a short common trunk from the external iliac.

From the Museum of John Howship, Esq.

1320. The parts concerned in a small oblique inguinal hernia, dried after the injection of their blood-vessels: from the left side of a woman. The aponeurosis of the external oblique has been divided nearly parallel to the crural arch, and its two portions are widely separated; the external ring being preserved. The lower margins of the internal oblique and transverse muscles are turned upwards. The fascia transversalis is also in part turned upwards, so as to show the inner border of the internal ring, and the neck of the sac passing through it. Part of the covering which the sac received from the intercolumnar fascia is left beneath that part of it which projects beyond the external ring.

From the Museum of Sir A. P. Cooper.

1321. Part a male pelvis, with the urinary and genital organs, giving a lateral view of the parts concerned in a large oblique inguinal hernia on the left side. The coverings of the hernia are dissected in five layers; exhibiting, from without inwards, the skin, subcutaneous fat and superficial fascia, the intercolumnar fascia, the cremaster muscle, with the fibro-cellular tissue connecting its fasciculi and the fascia transversalis. The sac is not opened. There is a stricture nearly an inch in length in

the membranous portion of the urethra; the prostate gland and the prostatic portion of the urethra are enlarged; the bladder is contracted, and its muscular coat is very thick.

From the Museum of Robert Liston, Esq.

1322. Part of a right inguinal region, with a large oblique inguinal hernia. The coverings of the anterior and lower part of the hernia have been dissected, and portions of them are separately raised from the surface of the sac. The vas deferens and spermatic vessels, lying on the inner and posterior part of the hernia, are widely separated from each other. The epigastric artery and vein, winding under the neck of the sac, have been displaced and elongated, as the neck of the sac has gradually moved from without inwards, and as the direction of the inguinal canal has become straight; they reach the side of the lower part of the rectus muscle before they turn upwards.

From the Museum of John Howship, Esq.

1323. Part of a right inguinal region, with the penis, scrotum, &c., and a very large oblique inguinal hernial sac, from a mulatto. The hernia hangs almost vertically, and, though empty, measures seven inches from above downwards. Three distinct layers have been dissected in its coverings between the sac and the skin. The testicle is directly below the hernia, and appears compressed by it.

From the Museum of Robert Liston, Esq.

c. Direct Inguinal Herniæ.

1324. Part of a right inguinal region, dried after the injection of its blood-vessels, and exhibiting a small direct (or internal) inguinal hernia, from which two layers of the coverings of the sac have been dissected. The epigastric vessels lie close to the outer margin of the mouth of the sac;

and the vessels of the spermatic cord are close to the outer part of its coverings.

From the Museum of Sir A. P. Cooper.

d. Various Inguinal Herniæ.

1325. The anterior part of a pelvis, with part of the abdominal walls and the sacs of two large inguinal herniæ. Both the sacs have the same form and size, the mouths of both are very wide, and at the back of both the vasa deferentia and the spermatic vessels run far apart from each other. The margins of the external rings, and the tendinous bands above them, are strongly developed.

From an old man who had stones in the urinary bladder. The herniæ protruded during straining, and were easily reducible. He was cut for the stone, and his bladder is preserved.

From the Museum of Robert Liston, Esq.

1326. A large oblique inguinal hernia of the right side. The sac contains the lower end of the ileum, the cæcum, with its appendix, a portion of the ascending colon, and a large piece of omentum. All the coverings of the hernia appear thickened, indurated, and consolidated.

From the Museum of John Howship, Esq.

1327. An inguinal hernia, containing a cæcum and its appendix, with the end of the ileum. The termination of the appendix is fixed to the lower part of the sac; the rest of it is free. Of that part of the cæcum which has not passed into the hernia one half only is covered with peritoneum.

Presented by Sir William Blizard.

1328. Part of the pelvis and abdominal walls of a young child, with the sac of an inguinal hernia, nearly two inches long, on the right side. The testicle is directly below the hernia: the cavity of the tunica vaginalis is closed above, and has no connection with the hernial sac.

From the Museum of John Howship, Esq.

1329. An inguinal, but not congenital, hernial sac, from an infant; with the testicle and its vessels minutely injected and dried. The vessels are widely separated upon the sac.

From the Museum of Sir A. P. Cooper.

1330. The sac of an inguinal hernia, dried. It measures ten inches from above downwards, and six inches in its transverse diameter.

Presented by Sir William Blizard.

e. Inguinal Herniæ from Animals.

1331. A very large inguinal hernia, from a monkey. The sac contains a portion of colon with omentum, both in a healthy state. The testicle is directly below the sac. *Hunterian.*

1332. A hernial sac, from a bitch, containing small intestine, a large portion of omentum, and part of the uterus. *Hunterian.*

1333. An inguinal hernia, from some large animal, with small intestine and omentum protruded into the cavity of the tunica vaginalis.

Hunterian.

1334. Part of a hernial sac, from a horse, containing a large portion of colon, which is adherent to what remains of the sac, and has false membrane upon its surface. *Hunterian.*

f. Complications of Inguinal Herniæ with Hydrocele and other Diseases.

1335. Part of a right inguinal region, together with the sacs of two oblique inguinal herniæ on the same side, dried after the injection of the epigastric, spermatic, and other vessels. The anterior sac has a small mouth, is elongated, and measures four inches in length. The posterior sac is

larger, and nearly globular; its mouth is wider, measuring an inch and a quarter transversely, and is placed directly behind that of the anterior sac. The spermatic vessels and vas deferens are attached to the back of the posterior sac, and the lower part of the anterior sac; and the epigastric vessels make a wide circuit, passing round and to the inner side of the necks of both sacs. The spermatic veins are varicose.

From the Museum of Sir A. P. Cooper.

The history of the case is published by Mr. Bransby Cooper, in the 'Guy's Hospital Reports,' vol. iv., p. 327, London, 1839. The patient was sixty-eight years old. He had suffered pain in the abdomen and vomiting for three days, and constipation for two days, though frequent purgatives had been administered, when Mr. Cooper first saw him. He found the left inguinal region larger than the right, but this appeared to be due to the absorption of the fat on the right side, on which a truss had been worn for many years. A small hernia had been returned on the left side, and one could be made to descend on the right side by coughing, but could be at once very easily returned. But the symptoms of strangulation becoming urgent, the left inguinal canal was laid open. An empty sac was found therein, but no strangulated intestine. The patient died next day; and on the examination after death it was found that the small anterior and elongated sac shown in the preparation had been pushed into the abdominal cavity, together with a portion of intestine, strangulated by its neck. The reduction of this sac had probably been effected by the patient while reducing the intestine from the larger and round posterior sac.

1336. The lower part of the anterior wall of an abdomen with the spermatic cords, testicles, &c. On the right side is the sac of an oblique inguinal hernia; on the left, a hydrocele of the tunica vaginalis, of nearly the same size as the hernial sac.

The preparation affords a good view of the difference of the external appearances produced by the two diseases. The parts were taken from a man eighty-six years old. The hydrocele had been tapped three times.

From the Museum of John Howship, Esq.

1337. An inguinal hernia, with an hydrocele of the tunica vaginalis. The hernial sac, which is placed directly above that of the hydrocele, and projects a little into its upper wall, is opened from behind: it is filled with healthy omentum, which is adherent to its inner surface. The hydrocele is of

small size, and the testicle is situated in the middle of the posterior wall of the sac. *Hunterian.*

1338. The parts concerned in an oblique inguinal hernia, with a large hydrocele of the tunica vaginalis, on the right side. The hernial sac is nearly three inches in length; its mouth is very wide; its tissue, as well as those around it, appears healthy; it has descended so as to come in contact with the upper part of the distended tunica vaginalis. The testicle, flattened and small, is in the lower third of the posterior wall of the distended tunica vaginalis: at the back, the vas deferens, and some of the vessels of the spermatic cord, are shown separated to nearly an inch from each other; large bundles of the cremaster muscle descend over both the hernial sac and the hydrocele. The epigastric artery and vein are shown winding under the neck of the hernial sac.

From the Museum of John Howship, Esq.

1339. The sac of a scrotal hernia, combined with hydrocele of the tunica vaginalis. The cavity of the tunica vaginalis has been laid open, and its anterior part turned back: in front, the tunica vaginalis is thickened; behind, it is very thin; a few shreds of false membrane are shown, by which its surfaces were united; the testicle, reduced in size, is situated at the lower and posterior part. The hernial sac has descended to the level of the testicle, pushing down the tunica vaginalis before it, so that the sac of the tunica vaginalis nearly surrounds the sac of the hernia.

Hunterian.

1340. A long inguinal hernial sac, with varicose spermatic veins widely separated from the vas deferens on its posterior surface.

From the Museum of Sir A. P. Cooper.

1341. The lower part of the front wall of an abdomen with an oblique inguinal hernia on each side, a hydrocele of the right tunica vaginalis, and varicocele of the left spermatic veins; dried after the injection of the blood-vessels. The inguinal canals have been laid open, and the lower

borders of the internal oblique and transverse muscles are raised. By the pressure of the herniæ the rings on both sides are brought near each other, so that the sacs appear to have been protruded directly from the abdomen. The vessels of the cord are separated.

From the Museum of Sir A. P. Cooper.

g. Congenital Inguinal Herniæ.

1342. The sac of a congenital hernia, in which the testicle was situated at the external ring. A small elongated growth of fatty tissue is attached to the upper part of the epididymis. *Presented by Sir William Blizard.*

1343. The sac of a large congenital hernia. The exterior of the sac is uneven and sacculated, through the unequal yielding of different parts of its walls: the testicle is situated at the lowest part. *Hunterian.*

1344. The sac of a large congenital hernia, nearly full of healthy omentum, which is in several places adherent to its walls. *Hunterian.*

Other Specimens of Inguinal Herniæ :—

Nos. 1286 to 1289, 1293-6-9, 1303-7-9, 1310-1, 2335, 3450-1-2-3.

SERIES XXV.—Section II.—C. ANATOMY OF FEMORAL HERNIA AND OF THE PARTS CONCERNED IN IT.

1345. The parts concerned in a large femoral hernia in a man. The sac is nearly globular, but somewhat elongated transversely, measuring in that direction four inches and a half in diameter; its mouth is transversely oval, and upwards of an inch wide. It contained part of the right colon, adherent, but not strangulated. Portions of the fascia superficialis and fascia propria are separated from the anterior surface of the sac; they are all thin, and appear healthy in texture. On the inner side, the spermatic cord has been pushed inwards by the sac; externally, the sac overlaps the femoral artery and vein, and extends to within half an inch

of the anterior crural nerve. The epigastric artery is shown, running tortuously from the upper border of the sac, at the back of the preparation. *From the Museum of John Howship, Esq.*

1346. The parts concerned in inguinal and femoral hernia, from the right side of an old man. There is a large femoral hernia, measuring about three inches in its transverse, and nearly two inches in its vertical diameter, and extending on the outer side over the femoral vessels. The sac has been laid open; it contains a large piece of hardened and adherent omentum, in the middle of which is a cavity, wherein a portion of strangulated small intestine lay. Part of the aponeurosis of the external oblique muscle has been raised, to show the lower margins of the internal oblique and transverse muscles, and the spermatic cord passing through the lower part of the inguinal canal. At the back of the preparation parts of the epigastric and obturator arteries are shown; they arise by a common trunk, and the obturator passes downwards on the outer side of the femoral ring, between the neck of the sac and the external iliac vein. *From the Museum of John Howship, Esq.*

1347. The right side of a male pelvis, with the blood-vessels and other parts injected and dried. The epigastric artery is given off by the external iliac, a quarter of an inch above the crural arch. About two-fifths of an inch from its origin it gives off a branch nearly a line in diameter, which descends, winding round the inner margin of the femoral ring, in the course sometimes taken by the obturator artery, when (as in the specimen last described) it arises by a common trunk with the epigastric. After turning round the femoral ring this branch passes under it, goes towards the foramen ovale, and joins the trunk of the obturator artery, which is of ordinary size, and passes, as usual, from the internal iliac. The junction of the two vessels takes place about half an inch previous to their united trunk leaving the pelvis.

From the Museum of Robert Liston, Esq.

1348. Part of an inguinal region, with its large blood-vessels injected. A long

hernial sac extends for an inch and a half below the crural arch, close to the inner side of the femoral vein. The obturator artery, arising by a common trunk with the epigastric artery, passes over and round the inner side of the neck of the sac: the length of the common trunk is about eight lines.

From the Museum of Robert Liston, Esq.

1349. Part of an inguinal region, with a large globular femoral hernia, from a man. The sac contains a portion of small intestine: its neck is very wide, and it has pushed aside the femoral vessels; its coverings have been removed.

1350. The left side of a pelvis, with part of the abdominal walls, and a large femoral hernia. The hernia, enlarging equally in all directions after its escape from the femoral canal, overlaps both the femoral vessels and the crural arch, and extends also inwards and downwards. The sac contains omentum, which is adherent to its mouth and neck, and to which a portion of small intestine is adherent within the abdomen.

From the Museum of John Taunton, Esq.

Other Specimens of Femoral Hernia:—

Nos. 1290-1, 1302.

SERIES XXV.—Section III.—UMBILICAL AND VENTRAL HERNIA.

1351. Part of the anterior wall of a child's abdomen, with a small umbilical hernia.

Hunterian.

1352. Part of the anterior wall of an abdomen, with the sac of a small umbilical hernia. The mouth of the sac is very small; it is completely lined with peritoneum, a portion of which, at the anterior part, has been separated from its coverings.

Presented by Sir William Blizard.

1353. The peritoneal sac, with the surrounding parts of the umbilical hernia, in which the intestine, No. 1300, was strangulated. The umbilical

cord is at the lower part of the sac; the umbilical vein at the mouth of the sac is open.

From the Museum of Sir A. P. Cooper.

1354. The sac and coverings of an umbilical hernia, with a portion of small intestine strangulated in it. The strangulated intestine is wrinkled, and dull white, as if it had sloughed. The sac is thickened.

From the Museum of Sir A. P. Cooper.

1355. Portion of the abdominal walls, with the sac of the umbilical hernia, from which the intestine, No. 1297, was returned after the division of the stricture on the left side of the mouth of the sac. The effects of the division can be seen in a slight effusion of blood in the situation mentioned. The sac became much smaller after the operation; its internal surface is rough, as if from lymph deposited within it.

From the Museum of John Howship, Esq.

1356. The parts concerned in a large old umbilical hernia. The tumour formed by the protrusion had an irregular knobbed surface externally, and on its interior such prominent ridges exist on some parts of the sac that it appears as if it were more than one cavity. The tissue of the sac is thin and transparent; it is filled with small intestine and omentum. The skin is flaccid and wrinkled.

Towards the close of life the hernia had become much smaller as the patient became more emaciated.

From the Museum of John Howship, Esq.

1357. A portion of the anterior wall of an abdomen, with part of the sac of an umbilical hernia and its contents, from a woman who died twenty-four hours after the operation for hernia was performed, and the contents of the sac were returned. The sac was very large; the part which remains has thick walls strongly fasciculated on their internal surface. The returned omentum is closely adherent to every part of the mouth

of the sac, and the returned intestine is adherent at the back of the omentum.

Mr. Hunter used to say of it, "This is a preparation where nature had done every thing in her power: it is of the umbilicus of one on whom I performed the operation, and who died in a little time after: and here you may see that the epiploon has, after the operation, adhered all round to the inner edge of the wound."—" *Hunterian Reminiscences*," by Mr. James Parkinson. London. 4to. 1833. p. 88.

1358. A large ventral hernia, containing small intestine and, at the upper part, some hardened omentum. The greater part of the sac and its coverings has been removed. An incision an inch and a half long was made into the front of the intestine during life; for it was found, in the operation performed for the relief of the hernia, that the intestine had sloughed beneath and near the stricture. A quill is passed into the sac and through its neck into the aperture produced by the sloughing in the intestine. Except at this aperture the intestine is everywhere adherent to the mouth of the sac, and shreds of lymph and false membrane are attached to its outer surface.

The patient, a woman thirty-seven years old, had the hernia many years. The operation was performed on the eleventh day after strangulation commenced. The cuticle had begun to separate, the skin was purple, and a part of the sac over the aperture in the intestine had sloughed. The intestine was freely opened, the omentum was cut off, and the stricture was not divided. The patient died six hours afterwards.

After death it was found that feces had escaped into the abdomen, through the aperture produced by the sloughing of the intestine. This aperture, as the preparation shows, extended into that part of the intestine which was within the abdomen, as well as into that in the sac immediately beyond the stricture.

The case is recorded in the "Edinburgh Medical and Surgical Journal," vol. xxi., p. 293, April, 1824.

Presented by Joseph Swan, Esq.

Other Specimens of Umbilical and Ventral Hernia:—

Nos. 1297, 1300.

SERIES XXV.—Section IV.—HERNIA THROUGH THE FORAMEN OVALE.

1359. Part of a pelvis, with a strangulated hernia of a small portion of ileum through the foramen ovale on the left side. The sac is opened anteriorly; it protrudes straight through the foramen.

From the Museum of John Howship, Esq.

SERIES XXV.—Section V.—INTERNAL STRANGULATION OF PARTS OF THE DIGESTIVE CANAL.

1360. Parts of an ileum and cæcum. The ileum, between two and three inches from its termination, is constricted by a thin band or cord of false membrane, which is attached at one end to a part of the omentum adherent to the mesentery, and at the other to the opposite surface of the mesentery, just above and behind the small intestine. In this course the band tightly encloses a portion of small intestine, nearly half the circumference of which is torn through at the constricted part.

The history of this case is recorded by Mr. Hunter as follows:—

“ Mrs. Long, in Potter Street, Westminster, was opened in presence of Drs. Huck and Garthshore. She had been ill for some days with a violent pain in the right and lower part of her belly, attended with vomiting. It came on without any cause that could be assigned. Nothing passed through her; she had gentle laxatives given her; also clysters thrown up, which came away as they were given. The warm bath was had recourse to, without any effect, and on the third or fourth day after the first attack she died. On opening the body the appearances were as follows:—The jejunum and ileum were pretty much distended with air, and also contained a dirty coloured fluid, which seemed to be what she had taken when alive. The epiploon adhered to the mesentery by a small adhesion near to the termination of the ileum. On examining this part we found that a doubling of the ileum, about an inch from its termination into the colon, had pushed through a kind of loop-hole made by the epiploon at this adhesion, and was there strangulated, as is often the case in a hernia.”—*Hunterian MS., Dissections of Morbid Bodies*, No. 129, p. 216.

A further account of the case, and engravings of the specimen, are given by Dr. Garthshore in the “ Medical Observations and Inquiries, by a Society of Physicians in

London," vol. iv., p. 223. London, 1771. The patient was a girl twenty-one years old, and died six days after the commencement of her illness. It is said, "As this cord was attached by one end to the mesentery, at a part to which the omentum adhered, and by the other to the ileum, Mr. Hunter [who was present at the examination of the body] imagined that it might have been originally formed by an adhesion of the omentum to both the mesentery and the ileon. He has since shown me two ligamentous processes somewhat similar, only more uniform in appearance. The one was attached by its extremity to two different parts of the same intestine; the other, to the intestine and to the mesentery. As there were in both cases evident marks of preceding inflammation, it is probable that they were formed first by an inflammatory adhesion of the parts, and then by a subsequent distraction and stretching, occasioned by the peristaltic motion of the intestines, and by exercise.

1361. A cæcum, with part of the ileum on which is a diverticulum. From the free end of the diverticulum there proceeds a smooth round cord, consisting, probably, of the obliterated omphalo-mesenteric vessels, about a line in thickness, and two inches and a half in length, which is attached at its opposite extremity to the mesentery, an inch and a half from the border of the intestine. A loop is thus formed by the diverticulum, the mesentery, and the cord connecting them, into which loop two portions of the adjacent small intestine have passed and been strangulated. The diverticulum is two inches long, and an inch wide at its base, and has the structure of healthy intestine. The intestine above the diverticulum is of ordinary size to within an inch of the part from which the diverticulum proceeds; the canal of the intestine then suddenly becomes not more than half an inch in diameter; and it remains of this size to where the diverticulum is given off; its coats also are at this part very thin and flaccid. Immediately beyond the diverticulum the canal of the intestine regains its ordinary size; and thus (since the base of the diverticulum is as large, and its coats are as strong, as those of the intestine itself) the lower part of the intestine appears as a continuation of the diverticulum, and not of the upper part of the intestine, its connection with which might easily be overlooked.

Presented by James Wilson, Esq.

1362. Portion of colon, to which the great omentum has in several places acquired unnatural adhesions. In one part, marked by a piece of whale-

bone, one of the appendices epiploicæ is adherent to the omentum in such a manner as to produce some degree of constriction of the canal of the intestines. *From the Museum of John Heaviside, Esq.*

1363. Portion of small intestine, in the coats of which is a large opening, with thick irregular margins, near the attachment of the mesentery. It is a rough ulcerated or torn aperture, such as might be produced in a hernia or an internal strangulation. Lymph is deposited on the peritoneal coat for some distance around the aperture, as if the intestine had been adherent to an opposite surface of peritoneum. *Hunterian.*

SERIES XXVI.—INTROSUSCEPTION (INTUSSUSCEPTION), AND PROLAPSUS OF THE RECTUM.

“ Introsusception is a disease produced by the passing of one portion of an intestine into another, and it is commonly, I believe, from the upper passing into the lower part.

“ If the mode of accounting for introsusception, which I am going to offer, be just, it will most frequently happen in the way I have stated, although there is no reason why it may not take place in a contrary direction, in which case the chance of a cure will be increased by the natural actions of the intestinal canal tending to replace the intestine; and probably from this circumstance it may oftener occur than commonly appears.

“ When the introsusception is downwards, it may be called progressive; and when it happens upwards, retrograde. The manner in which it may take place is, by one portion of a loose intestine being contracted, and the part immediately below relaxed and dilated, under which circumstances it might very readily happen, by the contracted portion slipping a little way into that which is dilated; not from any action in either portion of intestine, but from some additional weight in the gut above. How far the peristaltic motion, by pushing the contents on to the contracted parts, may force them into the relaxed, I will not determine, but should rather suppose that it would not.

“ By this mode of accounting for an accidental introsusception, it may take place either upwards or downwards; but if a continuance or an increase of it arises from the action of the intestine, it must be when it is downwards, as we actually find to be the

case; yet this does not explain those in which a considerable portion of intestine appears to have been carried into the gut below: to understand these we must consider the different parts which form the intromusception. It is made up of three folds of intestine; the inner, which passes down, and being reflected upwards, forms the second or inverted portion, which being reflected down again, makes the third or containing part, that is, the outermost, which is always in the natural position.

"The outward fold is the only one which is active, the inverted portion being perfectly passive, and squeezed down by the outer, which inverts more of itself, so that the angle of inversion in this case is always at the angle of reflection of the outer into the middle portion, or inverted one, while the innermost is drawn in. From this we can readily see how an intromusception, once begun, may have any length of gut drawn in.

"The external portion, acting upon the other folds in the same way as upon any extraneous matter, will, by its peristaltic motion, urge them further; and, if any extraneous substance is detained in the cavity of the inner portion, that part will become a fixed point for the outer or containing intestine to act upon. Thus it will be squeezed on, till at last the mesentery, preventing more of the innermost part from being drawn in, will act as a kind of stay, yet without entirely hindering the inverted outer fold from going still further. For it being the middle fold that is acted upon by the outer, and this action continuing after the inner portion becomes fixed, the gut is thrown into folds upon itself; so that a foot in length of intestine shall form an intromusception of not more than three inches long."

"I have asserted that the outer portion of intestine was alone active in augmenting the disease when once begun; but if the inner one was capable of equal action in its natural direction, the effect would be the same, that of endeavouring to invert itself, as in a prolapsus ani; the outer and inner portions, by their action, would tend to draw in more of the gut, while the intermediate part only would, by its action, have a contrary tendency.

"The action of the abdominal muscles cannot assist in either forming or continuing this disease, as it must compress equally both above and below, although it is capable of producing the prolapsus ani.

"In cases where intromusception begins at the valve of the colon, and inverts that intestine, we find the ileum is not at all affected, which proves that the mesentery, by acting as a stay, prevents its inversion.

"From the natural attachment of the mesentery to the intestines, one would, at the first view of the subject, conceive it impossible for any one portion of gut to get far within another, as the greater extent of mesentery that is carried in along with it would render its further entrance more and more difficult, and we should expect this difficulty to be greater in the large intestines than in the small, as being more closely confined to their situation: yet the largest intromusception of any known was in the colon, as related by Mr. Whately.*

* *Vide Philos. Trans.*, vol. lxxvi., p. 305.

"The intussusception appeared to have begun at the insertion of the ileum into the colon, and to have carried in the cæcum with its appendix. The ileum passed on into the colon, till the whole of the ascending colon, the transverse arch, and descending colon, were carried into the sigmoid flexure and rectum. The valve of the colon, being the leading part, it at last got as low as the anus; and when the person went to stool he only emptied the ileum, for one half of the large intestines being filled up by the other, the ileum alone, which passed through the centre, discharged its contents."

"This disease happens most frequently in the first fifteen years of life, not occurring so commonly in older people; neither does it, I believe, ever take place in the colon itself, although we find that gut affected by it."*

From a paper by Mr. Hunter, "On Intussusception," in the "Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge," vol. i., p. 103, 1793, and in his "Works," vol. iii., p. 587.

* A prolapsus ani is, in some respects, similar to an intussusception, and may possibly begin in the same way, but is continued by the action of the abdominal muscles, never by the action of the gut itself. It differs from intussusception as not being contained in a gut: for instead of having an inclosing gut inverting itself by its own action, there is an enclosed gut protruded by the action of the abdominal muscles and the passing of the fæces through it, and the point of inversion is at the extremity of the protrusion, and as it inverts it pushes out of the body.

1364. An intussusception of jejunum. A portion about four inches long has passed downwards into the canal below it, which is to the same extent inverted to receive it. The section which has been made of the lower and outer portion of intestine shows its inversion, the narrow orifice of the intussuscepted portion, and the constriction of the mesentery which has been carried downwards with it.

The patient died with polypus and inversion of the uterus. Her case is related, with the description of the uterus, No. 2654.

Hunterian.

1365. Portion of the small intestine of a child, four years old, in which are three intussusceptions close to one another. In all of them the intussuscepted portion is directed downwards. There is no appearance of any change of structure being produced by them.

Hunterian.

1366. Portion of ileum, with intussusception. The intussuscepted part has been carried downwards; its lower orifice is turned towards the attachment of its mesentery, and is narrow and elongated.
1367. Portion of the small intestine of a cat, in which are two intussusceptions within a short distance. In one [the intussuscepted portion is carried upwards, in the other downwards. The coats of the intestine are healthy. *Hunterian.*
1368. Part of the intestines of a child, nine months old, in which is an intussusception of the ileum, cæcum, and ascending portion of the colon into the sigmoid flexure of the colon. The two canals in the middle of the preparation, into which apertures have been made, are the lower end of the ileum and the appendix of the cæcum.

The following account of the case, with an engraving of these parts, is given in Mr. Hunter's paper on intussusception, already referred to, p. 589.

" Since that time the following case has occurred, which is in many respects similar [to that related by Mr. Whately, *see* p. 139]. The patient was attended by Dr. Ash, and the body inspected after death by Mr. Home:—

" A. B., aged nine months, a large, healthy, well-looking child, who, as far as appeared, had never been indisposed from his birth, was seized with a strong spasm, stretching himself out suddenly, without having had any symptoms of previous ailment. Either during the spasm, or immediately after it, he passed a very large stool, and after that discharged at intervals small quantities of mucous slime, covered over with little specks of recent fluid blood.

" Dr. Ash visited him four or five hours after this attack, and found him in all other respects perfectly well; the child sucked heartily, but Dr. Ash, on observing his pulse to be less quick than is usual in children so young, his heat to be rather below the common standard, and, added to these, the small mucous and bloody discharges, suspected that mortification had taken place in the bowels, without being able to guess at the cause, as the child had laboured under no previous indisposition. In this uncertain situation various means of relief were attempted by purgatives, fomentations, the warm-bath, and different kind of clysters, but without any good effect. On his first examination of the abdomen he felt (or thought he felt) a deep-seated fullness or hardness under the left hypochondrium; blisters were applied to the part, and every possible means attempted, without obtaining any evacuation by stool, or any other apparent relief; his strength gradually sunk, and his pulse became gradually weaker, although he continued to take the breast eagerly till within a few hours of his death, which happened just sixty hours after the first spasmodic attack.

"The following were the appearances found in the dead body. Upon opening the abdomen, the small intestines, considerably distended with fluid contents, occupied so much of the cavity as to prevent any of the other viscera from being seen, and the mesentery was so much confined that the convolutions of the small intestines could not be readily followed. This confinement was found to arise from an intussusception of the ileum and its mesentery, together with the cæcum and ascending colon, into the descending part of the sigmoid flexure of the colon, the mesentery of the ileum being drawn up so obliquely across the root of the mesentery as to prevent the jejunum from having its usual freedom of attachment.

"The only part of the colon which could be seen was the sigmoid flexure, in which was distinctly to be felt a hard substance, consisting of the ileum and inverted colon. These parts being removed, for the purpose of a more accurate inspection of them, the sigmoid flexure of the colon was laid open, and was discovered to contain the cæcum and colon in an inverted state. The internal surface of these, when exposed, was found to have put on a dark red appearance, approaching to black; the whole appearance like a solid substance, rounded at the end, hanging loose into the descending colon, and about four inches long. Upon dividing the inverted colon, the ileum and appendix cæci were seen lying close to each other, and their two openings found on the rounded end of the inverted colon leading directly into the sigmoid flexure; the portion of the ileum was a little twisted, but not in the least corrugated; it was rather stretched, and much pressed against the appendix cæci and its own mesentery by the surrounding colon; and a convolution of the appendix near the termination was so much pressed against the ileum as to make a mark upon it, and probably had compressed its sides so as to prevent any thing from passing. The portion of ileum was about four inches long.

"The inverted colon had drawn in the meso-colon, and a portion of the omentum that was attached to the transverse arch. The portion of the colon near the valve, which formed the extremity of the inverted part, was much thickened in its substance by the effects of inflammation, being four or five times its natural thickness: it was a good deal corrugated, or folded upon itself; the folds at this part seemed to adhere to one another, and form one mass. The inflammation and thickening only extending two inches, the gut becoming gradually thinner, till it was of its natural thickness and appearance; so that what was only four inches in length of intussusception, contained a considerably greater length of intestine.

"The sigmoid flexure, which was the containing intestine, had the natural appearance, but was dilated or relaxed; and the other contents of the abdomen were in a natural state, nor had the child any other apparent disease."

1369. Portions of small and large intestine, exhibiting an intussusception of the last three inches of the ileum and of the cæcum into the ascending colon. The ileum having first passed through the ileo-cæcal valve, is the most forward of the intussuscepted parts. A portion of glass is placed in the

canal of the appendix of the cæcum, which lies near the end of the ileum, and has been carried into the colon with the cæcum, without being inverted. The mucous membrane of the intussuscepted portion of the ileum appears to have been gorged with blood, and lymph is effused on it; in the part above it, the Peyer's and solitary glands are very large. The colon beyond the part into which the intussusception has taken place is contracted.

From a child twelve months old, which had disordered bowels for a fortnight before the more serious signs of intussusception commenced. It died twenty-four hours after their first appearance.

From the Museum of George Langstaff, Esq.

1370. Part of the intestines of a child, five months old, in which is an intussusception of the transverse and ascending portions of the colon, the cæcum, and about six inches of the ileum, into the sigmoid flexure and the rectum. The intussuscepted portion was strangulated, and in the recent state was black; it extended to within two inches of the anus.

The child had been healthy up to the time when the signs of the intussusception first appeared. It died five days afterwards. The enlargement of the distended intestine was distinctly felt in the abdomen at the seat of intussusception.

An account of the case, and an engraving of the preparation, are given with "A Case of Intussusceptio," by Thomas Blizard, Esq., F.R.S., in the "Medico-Chirurgical Transactions," vol. i., p. 169. London, 1812.

Presented by Thomas Blizard, Esq.

1371. Part of the intestines of a child, in which, as in the preceding specimen, the greater part of the colon, the cæcum, and about four inches of the ileum are inverted and forced into the rectum.

The patient was a child ten months old. The symptoms were faintness, with almost a loss of consciousness, depressed pulse, vomiting, and constant straining; nothing passing from the intestines except a little bloody mucus. The inverted intestine could, during life, be felt in the rectum, nearly protruding through the anus.

An account of the case, and an engraving of the specimen, are contained in a paper by Mr. Rowe in the "London Medical Gazette," vol. xv., p. 119. London, October 25, 1834.

Presented by Joseph Swan, Esq.

1372. The rectum of a child, four months old, distended by a large portion of the colon inverted and forced into it.

The child had been ill three weeks before the first severe signs of intussusception were observed, and died six days after their commencement.

A further account of the case, and an engraving of the preparation, are in the "Edinburgh Medical and Surgical Journal," vol. viii., p. 129, Edinburgh, 1812, with "Some observations on Intussusception," by Mr. Howship.

Presented by John Howship, Esq.

1373. An intussusception of a large portion of ileum within the cæcum and colon of a dog. The walls of the intussuscepted portion are very thick, and were turgid with blood. Its lower orifice is very small, and is turned directly towards the attachment of the mesentery. *Hunterian.*

1374. Part of the intestinal canal of a dog, in which is an intussusception of a portion of small intestine within the cæcum and colon. The intussuscepted portion is curved in more than a semicircle by the tightness of the mesentery attached to its border, and from the same cause its lower orifice is drawn backwards, and is seen, not at its extremity, but at its posterior surface. The mucous membrane of the whole intestine was full of blood. *From the Museum of George Langstaff, Esq.*

1375. Part of the ileum of a dog with an intussusception: The containing intestine has been burst in nearly its whole circumference by the distension of that within it; a portion of the latter is shown protruding through the aperture. Here also, as in the last specimen, the intussuscepted intestine is unnaturally curved, and its lower orifice is turned backwards by the tightness of its mesentery.

In both these dogs the disease appeared to have been produced by the administration of *Turpethum Minerale* for the cure of distemper. The signs commenced almost immediately after they had taken it. In the first case the dog lived two days, in the second three days. In the latter, blood was effused into the abdomen from the ruptured intestine, acute peritonitis existed, and the mucous membrane of the intestine appeared highly inflamed; in the former, the effects were much less severe.

From the Museum of George Langstaff, Esq.

1376. Portion of small intestine, about two feet in length, black and ragged, which was discharged *per anum*, probably after intussusception.

The man, a soldier in the hospital at Antigua, recovered.

Presented by John Bourke Douglas, Esq.

1377. The end of an ileum, with the cæcum and part of the colon of a patient who, many years before death, voided a piece of intestine. The coats of the cæcum and colon are thickened, and appear to have been covered with false membrane. Between three and four inches from the termination of the ileum, there is a contraction of the colon, indicating, probably, the part at which the discharged portion of intestine was intussuscepted and separated. The canal of the colon at this part is only half an inch in diameter.

1378. Part of an ileum, in which is an intussusception of a portion about six inches in length. At the foremost part of the intussuscepted intestine there is a firm tumour, of oval form, two inches and a half in length, and an inch in diameter, attached to the mucous membrane and projecting into the canal of the recipient part of the intestine. A bougie is placed in the lower orifice of the inverted and intussuscepted intestine, by the side of the tumour. The coats of all parts of the intestine are thickened; they have been blackened by the solution in which they were placed.

The patient was forty-five years old. She had been ill for three months before her death, and complained throughout of extreme pain in the left side and back, as if something within the abdomen were pressing the ribs and spine outwards. She had also occasional nausea and vomiting, with constipation and sensation of heat in the abdomen.

She was variously treated, without advantage, and gradually sank; vomiting of feculent fluid supervened shortly before death.

All the organs, with the exception of the part preserved, were found healthy after death.

From the Museum of John Taunton, Esq.

1379. Part of the intestine of an old man, in which is an intussusception

of the cæcum, ascending colon, and part of the ileum, protruded into the lower part of the colon. In the cæcum, which is the foremost of the protruded parts, there is a large, flat, lobular, and warty growth covering nearly the whole circumference of its mucous membrane: in the descent this growth has preceded the intestine. A portion of glass is passed into the lower orifice of the inverted cæcum, which is by the side of the tumour and appears narrowed by its pressure.

The patient was a robust man, seventy-three years old, who had spent nearly all his life in the navy. He had signs of disordered digestive organs long before those of intussusception appeared. These came on a week before his death. The liver and pancreas were diseased, but all the other organs of the thorax and abdomen appeared healthy, and no similar tumours were found in any other part.

Presented by Copland Hutchinson, Esq.

1380. A rectum (placed upside down) in which there is an intussusception of the upper within the lower part. At the lower (which now appears the upper) end of the intussuscepted portion a thick, firm, cancerous tumour, like an epithelial cancer, extends nearly all round the intestine, as well as deeply into its coats, and projects far into its cavity. The adjacent mucous membrane is healthy.

The patient had long suffered with costiveness, and, for eight months before his death, had pain in voiding his fæces, and they were mixed with blood and pus. He had hemorrhoids also, and prolapsus ani. He died with ascites from diseased liver.

After death, the large intestine above the intussuscepted part was found distended with fæces. The canal of the rectum was reduced by the tumour to a quarter of an inch in diameter; and it appeared evident that the intussusception had been produced by the fæces pressing upon the upper part of the tumour till they had inverted the portion of the intestine to which it is attached, and had forced it downwards.

From the Museum of George Langstaff, Esq.

1381. An anus, with an inversion and protrusion of the rectum three inches long. There are numerous irregular superficial ulcers of the mucous membrane of the inverted portion of the rectum, and both this portion and that which was protruded appear to have been very vascular.

The disease had existed a long time, in a woman fifty-two years old.

From the Museum of John Howship, Esq.

1382. The rectum, anus, uterus, and other adjacent parts of an old woman. A considerable portion of the rectum is inverted and protruded through the anus, forming a tumour of nearly hemispherical form between three and four inches in diameter. The mucous membrane of the rectum is thickened and extensively ulcerated. The margin of the anus is surrounded with hemorrhoids, some of which are large and pedunculated. There is also some degree of prolapsus of the uterus with inversion of the vagina.

From the Museum of Robert Liston, Esq.

SERIES XXVII.—ANATOMY OF ARTIFICIAL ANUS, OR UN-
NATURAL EXTERNAL COMMUNICATIONS WITH THE
INTESTINAL CANAL.

1383. Portion of small intestine, which, after a wound dividing nearly its whole circumference, became adherent to the margins of the corresponding wound in the abdominal wall, and had long opened through an artificial anus. Quills are passed into the orifices of the intestine above and below the external opening; the mucous membrane protrudes in a circle from each of the orifices, and they are nearly an inch apart. A portion of liver is adherent to the intestine close behind and above the artificial anus.

Presented by Sir William Blizard.

1384. Parts of a small intestine, and of the adjacent wall of the abdomen, with an artificial anus formed after a strangulated hernia. The external aperture of the anus is three quarters of an inch long, and narrow; the skin around it is like mucous membrane, and deeply depressed. The part of the canal connected with the false anus is a loop of small intestine, which is firmly adherent around the internal orifice of the passage, and of which the portions above and below the anus form an acute angle with each other.

Presented by Thomas Copeland, Esq.

1385. A portion of skin removed, some time before the death of the patient, from the margin of the artificial anus last described.

The history of the case was thus recorded by Mr. Hunter:—

“ *Hernia.*

“ An Italian was taken into St. George’s Hospital with a bubonocoele. It was an old rupture, which had been reduced at different times, but at last came down so large as not to allow of being returned.

“ When he came in it had been down nine days, which gave rise to the appearances I observed in the operation. He had all the symptoms of a strangulated hernia now reduced to the last extremity; therefore no time was to be lost.

“ Upon exposing the contents of the sac, and cutting through the stricture, it was found to contain epiploon inclosing the gut. The epiploon on its external surface everywhere adhered to the sac, but these adhesions were recent; however, I was obliged to use force with my finger to separate them. When this was done I unravelled the epiploon, and exposed the gut, which adhered by its external surface everywhere to the epiploon. This I separated with ease, except at the lower part, where the adhesion was pretty firm; however, it gave way, but I found the substance of the gut was gone there, and that it only adhered round the hole in the gut. I cut off the whole of the epiploon; the whole of the intestines were reduced except where the hole was, and that part was fixed in the rings by two stitches.

“ *Quære,* Would it not have been better practice not to have separated this union, but have reduced it in the united state, so that the epiploon might have become part of the gut; or have reduced it all to [except?] this part, leaving it in the sac, and healing the parts over it.

“ The wound healed up to the openings of the gut, which were very large, making a slit about three inches in length, and about one inch wide; with the inside of the gut a little protuberant or inverted, with the faeces coming this way. When the parts were perfectly healed, and the cicatrix all round became pliable and soft, I tried to bring the skin on each side together over the opening; which I found I could easily do. I next endeavoured to prevent the faeces coming this way, by applying a large piece of sticking-plaster over the whole [hole?], over that a thick compress, and over the whole a steel spring-truss, to make a compression. I found by this means that the faeces found the lower orifice of the gut, and came away by the anus.

“ Finding that if the faeces were prevented coming through the wound, that they then could pass the right way, I thought it was worth trying how far it was in my power to close up this opening entirely.

“ I conceived that if I was to remove the edges of the skin all round the opening, and make it a fresh sore, I then might be able to unite them across the opening by the first intention: to which experiment he readily consented. It was now made a fresh wound all round for near half an inch in breadth: the two surfaces were brought together, and kept there with the hare-lip pins, as also with compresses on each side

to support the pins; but part of the fæces worked through between the two surfaces, and prevented the union, although the larger part of them went the right way.

“ When the sore began to granulate, I next tried to unite them, as before; but, as before, the same cause of prevention took place, and it again proved unsuccessful. Upon the healing of this sore all round, the opening into the gut was much lessened by the contraction of the granulations.

“ Finding that I could not succeed in the union by the first intention, nor by means of granulations, and finding that the opening was much lessened by the method above taken, I conceived if the same operation was repeated that I might be able to bring the opening into a very small compass, and probably might be able afterwards to close it entirely up.

“ The man submitted to the operations the second time, and when this was healed the opening now in the skin was not above an inch long. He now left the hospital till the parts became fit for some other trial; but he made his complaint a means of support, which was probably an easier mode than that arising from industry; and on the benevolence of the nobility and gentry of this country he lived comfortably himself, and supported a sister, till his death, which was in consequence of a pulmonary consumption. Upon opening the body we found the gut which had protruded was the ileum, about two feet from the cæcum. Upon the inside of the belly it appeared as if the gut only adhered to the peritonæum as it passed across, for it almost went straight across without making an angle; for the gut was nearly as broad or thick at this part as at the two adjacent loose parts: so the canal of the intestine was continued freely across the opening, and almost without any diminution. By introducing the finger into the external opening it came directly into the gut at this adhesion, and could from thence be pushed into either part of the gut.

“ As a certain portion of the gut was lost by mortification at this part, and as also a certain portion more was retained down in the ring to admit of adhesions there, both of which we must conceive was nearly, if not wholly, the diameter of the gut,—but most probably making the gut make an angle there, so as to make the opening appear double; one going into each part of the gut, and the angle forming the septum,—then it becomes a question, how came the gut to be so complete at this part? only seeming to pass across, making no angle, only having an opening on the adhering side, which communicated externally without the least appearance of there having been any loss of substance. The only way to reconcile these two contradictory facts is to suppose that Nature had been employed in perfecting the gut within the abdomen, and which, probably, was assisted by the stopping of the mouth of the external opening, with a view to force the fæces the right way, which, obliging that side next to the abdomen to stretch, did dilate; and which would dilate inwards towards the cavity of the abdomen: and this would also be assisted by every motion of the intestines within the abdomen; for every motion would be a pulling or dragging of the intestines inwards, so as to take off the angle. It had not pulled inwards that part of the intestine which lay in the wound, for there it still lay.”—*Hunterian MS., Cases and Dissections, No. 54.*

On a drawing of the parts, preserved in No. 1384, it was written—"The preparation is in the possession of Mr. Ford." It was presented to the Museum by Mr. Copeland, Mr. Ford's nephew, but no record could be found of the exact time or circumstances of the patient's death.

In his lectures, Mr. Hunter used to say of this case—"A man in St. George's Hospital had a hernia, for which I laid the integuments open, and then the sac, when I found that the intestine had a tendency to mortify, and had formed adhesions to the sac. These adhesions, which were newly formed, I separated, when that part of the intestine which had adhered to the sac gave way, and the excrement came out: I therefore returned the intestine, and retained the torn part to the external wound, which became the anus: but there was still an open communication between the upper and lower parts of the gut, so that, could the opening in the groin have been stopped the fæces would have passed the natural way. To produce this, I dissected off the skin round the opening, and then brought it into contact with ligature, compress, &c.: but this would not do, although the granulations, by their contractions, lessened the size of the opening. I therefore repeated this operation, hoping that, at last, I might quite close it; but all my efforts were in vain.

"Now, in the above case, I acted like a blockhead, being ignorant of what Nature was here doing; for (admire her work) she was forming adhesions of the intestines all round that mortified, whereby she would not only have preserved the continuity of the canal, but by this same process would have prevented any escape of the fæces: all which I prevented by separating those adhesions. If the case was to happen again, I should not separate the adhesions after taking off the stricture."—*Hunterian Reminiscences*, by Mr. James Parkinson, p. 41. London, 1833, 4to.

1386. Part of a jejunum, with a false anus formed after strangulated femoral hernia. A portion of the intestine, about eight inches long, is inverted and protruded through the false anus.

From the Museum of John Howship, Esq.

1387. Part of the left groin of a man, in whom an artificial anus was formed, after sloughing of a strangulated portion of the sigmoid flexure of the colon, thirty years before death. The intestine protrudes from the aperture in the integuments in the form of a round flattened swelling, and its mucous membrane is so inverted that only a wrinkled transverse aperture remains in the middle of its surface: its exterior is closely adherent to the integuments and the interior of the inguinal canal, through which it was protruded in the hernia. The portion of the intestine below the artificial anus is much smaller than that above it.

The history of the case is stated in the account of the diseased rectum of the same patient, No. 1276.

Presented by William Lawrence, Esq.

1388. The parts connected with an artificial anus, through which a portion of small intestine opened externally near the umbilicus. The preparation exhibits, at the back, the orifice of the artificial anus, with a small portion of the abdominal walls; in front of these is the portion of small intestine which opened externally, and which is closely adherent to the abdominal walls, as well as to several portions of intestine lying near it.

Mr. Hunter left the following record of the case:—

“ Case of an Abscess formed between the Intestines and Abdomen, into which an Intestine opened; and which opened externally through the Navel.

“ The appearances on opening the body of Master Calthrop.

“ As it was imagined there must be an adhesion of the intestine to the navel, which evacuated its contents through this part, I first made a circular incision round the greater circumference of the abdomen, so as to get into the cavity at some distance from the adhesions; but was disappointed, for I could not find any cavity, excepting on the left side of the navel, where I came into a cavity of about the size of an egg, whose inner surface appeared like the inner surface of an abscess, and which proved to be such.

“ The whole parietes of the abdomen were found adhering everywhere; to the liver above, the epiploon below, and it again to the intestine behind; as also to the whole fore part of the bladder of urine, which was large, high, and full; for, from its universal adhesions, it could not empty itself. The whole of the intestines adhered to each other; but the anterior surface of the stomach did not adhere to the concave surface of the liver.

“ On separating the parietes of the abdomen all round from the parts underneath, towards the navel, I observed a hole in an intestine just behind the navel, opening into the cavity of the abscess above mentioned, but I did not expect that this was the mode of communication; however, by introducing a probe through the opening in the navel, it passed directly into this abscess, so that the contents of the gut got first into this abscess, and then out by the passage in the navel.

“ There was a great deal of strumous deposit between the intestines, in form of lumps; some as large as a large filbert, uniting two or more intestines together: the same on the liver, and a good many like peas in the epiploon. These were all of the tubercle kind, a mixture of coagulable lymph and curd.

“ The mesenteric glands were only slightly diseased.

“ In the present case it may be difficult to say which was cause, and which was effect, viz., whether the bursting of the intestine became the cause of the adhesions, or that they were equally effects of the same or original cause; which last is most prob-

able, for the bursting of the intestine would most probably have hindered adhesions from so universally taking place ; yet, if the adhesions had taken place first, this cavity could not have formed ; therefore most probably happened nearly about the same time : for the adhesions being either ready to take place, or just had taken place, hindered the extravasated contents of the intestines from spreading further, only keeping this space from uniting, forming a reservoir, which produced considerably more inflammation, which secured it ; and then suppuration and ulceration in this cavity, which brought the mixed matter to the navel. The orifice in the gut not closing, continued to keep the passage in the navel open.

“ It may be remarked as a curious fact, that most abdominal suppurations open at the navel, especially those that do not arise immediately from the true suppurative inflammation setting down on a part. Thus we have extraneous bodies producing slow inflammation, and slow suppuration taking that course.

“ Most children who have died in the abdomen, probably extra-uterine cases, have come that way. Some ovarian cases also have come by the navel. From these facts it would appear that ulceration more readily takes place there than in any other part.”—

Hunterian MS., Cases and Observations, No. 64.

1389. Portions of small intestine, and of the adjacent abdominal wall. A large part of the intestine is intimately adherent to the wall of the abdomen ; its cavity is laid open from behind. In the antero-lateral wall of the intestine, a smoothly defined oval aperture, about one-third of an inch in diameter, leads to a short fistulous passage, which traverses the abdominal wall, and opens externally at the bottom of a large, deep, and irregular ulcer in the thickened integuments. This ulcer, judging by the hair growing near it, was probably situated in the groin. Immediately below the aperture in its walls the canal of the intestine is suddenly contracted to one-third of an inch in diameter, and then, bending abruptly, again enlarges to nearly its natural size. The coats of the intestine appear healthy at every part except at the aperture in these.

From the Museum of Sir A. P. Cooper.

1390. A portion of ileum, with part of the sigmoid flexure of the colon, and the uterus. They are all unnaturally adherent, and an ulcerated passage, indicated by a piece of wood, extends from the ileum through the fundus of the uterus into its cavity.

The patient was a woman sixty-one years old. Ten years before her death she had obstinate diarrhoea, which continued for about twelve months, and was succeeded by a fæulent discharge from the vagina. This discharge continued for nine months,

the fæculent matter becoming gradually more abundant and more solid : during all this period there was no discharge of fæces by the rectum. But after nine months the fæces resumed their natural passage, and there remained only a mucous discharge from the vagina. After death this disease alone was found : but there is no record how the aperture between the ileum and uterus was closed for the last eight years of the patient's life.

From the Museum of John Taunton, Esq.

SERIES XXVIII.—INJURIES AND DISEASES OF THE LIVER.

1. *Injuries by Violence.*

1391. A liver, broken completely through its substance, so that its two portions are held together by the coronary ligament alone. The fracture extends in a vertical plane from before backwards by the side of the gall-bladder.

The injury was produced by crushing, and the patient, a man forty years old, survived it two days.

Presented by Edward Stanley, Esq.

2. *Fatty Degeneration of the Liver.*

1392. Section of a liver, of which Mr. Hunter left the following description :—

“ *February 9th, 1760.*—I opened the body of Mrs. Johnston, with Dr. Pringle. There were about two gallons of water in the abdomen. The liver was somewhat contracted, and harder than common, and very irregular, both on its surface and internal structure ; seemed as if made up of different substances. These knotty parts were of a white colour, and the intermediate substance of a yellow. The gall-bladder and ducts clear ; pancreas contracted, and harder than common. The kidneys soft, whitish, and the pelvis filled with a matter like common pus in an abscess, but there was no ulceration. Epiploon beginning to be shrivelled up at the lower edge, which is common in an ascites ; a very fat mesentery : indeed the whole body was so. The uterus had two small bodies of the steatomatous kind, some blood in its cavity ; but she had had no menses for a long time. The lungs very sound ; no adhesion ; a little water in the

cavity of the pleura, and some in the cellular membrane of the lungs themselves, which had subsided to the lower part of the lungs, and was so loaded with water as almost to sink in water.

“ The case, before death, Dr. Pringle has.

“ I took a piece of the liver home with me, to try some experiments with it. I observed that the knife that I cut the liver with was besmeared with a white substance. I suspected that this was fat, therefore held it to the candle, and it melted. I then took some small pieces and boiled them, and extracted near one-third of oil out of them, of a very yellow colour, much yellower than the other fat of the body, which was something acid, as in the boiling: it appeared white while in the liver and upon the knife; but, perhaps, it was owing to the gall in the liver mixing with it; upon which I took some tallow, which is white, and boiled it in water with some gall, and it became of a yellowish colour.

“ By Dr. Pringle’s desire I tried the following experiments:—

“ On Monday I put six pieces of the liver into the following menstrua. The common dilutant was water; and the same quantity in each, which was seven ounces.

“ 1st. A slice into 7 ounces of common water by way of standard.

2nd.	„	„	distilled.
3rd.	„	„	1 ounce of vinegar.
4th.	„	„	3 p. sal. tar.
5th.	„	„	3 iv. sapon.
6th.	„	„	lime-water.

“ They stood by the fire for seven hours at first; then let be cold. On Thursday following, which was three days, the first had a putrid smell. On the Friday following, the second and sixth began to be offensive; the others at that time only smelled of the ingredients. The piece that was put in the soap became white in the oily parts. The vinegar made its piece green, which was owing to the bile being mixed with the acid. The others became somewhat darker.”—*Hunterian MS., Dissections of Morbid Bodies*, p. 80, No. 59.

3. *Induration and Contraction of the Liver, including Cirrhosis.*

1393. “ Section of a liver that had thickened without inflammation similar to tumour.”—*Hunterian MS. Catalogue*.

1394. Section of a liver, the substance of which is pale, indurated, contracted, and formed into round and oval nodules of various sizes, which project upon the external surface of the liver, and, on the surface of its section, appear separated by thin partitions of cellular tissue.

The specimen affords an excellent example of the change termed cirrhosis of the liver, or hob-nailed liver.

Hunterian.

1395. A similar specimen. It shows, also, slight thickening and opacity of the peritoneum, especially in the suspensory ligament, and a characteristic roundness and nodulated unevenness of the anterior margin of the liver.

The disease had existed many years, and, after numerous attacks of jaundice, ended with ascites and anasarca.

From the Museum of John Heaviside, Esq.

1396. A similar specimen, with the same nodulated appearance, produced by breaking and tearing through the substance of the liver, as is shown on its outer surface in the preceding instances. The peritoneal coat is thickened, and shreds of false membrane are attached along the anterior margin of the liver.

Presented by James Paget, Esq.

4. *Abscess in or involving the Liver.*

1397. Portion of a liver, and of the wall of a large circumscribed abscess in it. The wall is, in parts, fasciculated, and is lined with a thin and nearly smooth layer of firm lymph closely attached to the substance of the liver.

Hunterian.

1398. Portions of a liver and right lung adhering together through the medium of the diaphragm. Bristles are passed, through several bronchial tubes, into the cavity of an abscess in the liver, the fluid from which was expectorated through the lung.

Mr. Hunter has recorded the case as—

“ *The Case and Appearances, after Death, of Mr. Bertram, March 2nd, 1772.*

“ About five months ago he was attacked with a violent pain in his right side, which was imagined to be a pleurisy, as he had a difficulty in breathing. The situation of this pain was on the right and towards the lower part of the thorax. He was bled four times, and a blister applied to the part affected. The complaint still continuing

(although not with such violence) he was sent into the country, and ordered a low diet, with milk and some brandy put into it. He went on for some months in this way, but growing thinner. The cough became violent; a spitting of phlegm, shortness of breathing (which was increased when he lay on his left side), all took place. About three months and a half after the attack, and about six weeks ago, he observed a swelling on his right side, where the pain was, and came to town upon that account.

"About five weeks ago I saw him, with Dr. Fordyce, and we found a plain fluctuation of fluid: but at the part that was swelled, I could not feel the ribs. I could trace the seventh, eighth, and ninth ribs from behind down to the swelling, but there lost them. It was agreed that this fluid should be let out, and the day following was the time appointed. When we went next morning we found him on the close-stool, and while there, he had been attacked with a violent fit of coughing, and a spitting up of a bloody matter, which came so fast as to threaten suffocation. It was imagined by us both that the abscess had opened into the trachea, and that no time was to be lost.

"We opened the abscess, and evacuated between four and five quarts of a duskish-coloured matter: the quantity astonished us. Upon my introducing my finger into the orifice, I found two of the ribs bare all round, so that the matter lay more superficial than the ribs, and had pushed away the external muscles and skin from them at this part, which was the reason of my not feeling of them at this part. The matter by the mouth ceased very soon after this other discharge. He went on discharging large quantities of this kind of matter, with large sloughs. He often thought that the air which he drew in by his mouth in inspiration was partly discharged by the wound, in expiration. He became weaker and weaker, and died on the 1st of March, 1772, five months after the first attack, and five weeks after the opening of the abscess.

"On opening the abdomen and thorax, we found the lungs of the right side adhering to the ribs of that side, at the lower and outer edge; and to the diaphragm, wherever it came in contact with that muscle: and also the liver to the abdominal muscles on the right side, as low as the lower edge of that viscus. On tearing the fore part of this adhesion we came into the abscess, which appeared to be a large cavity, made by the liver on the inside, the abdominal muscles and ribs on the outside, and the diaphragm above; but it evidently had formed originally within the substance of the liver, near to the right side.

"This abscess, like all others, was led to the external surface of the body, but before it could effect this, the liver was obliged to adhere to the diaphragm above, and to the abdominal muscles on the right. As the diaphragm took the disposition of ulcerating on its abdominal side, it took on the adhesive disposition on the opposite side, and thereby it adhered to the lungs above, and to the ribs near to its attachment to them. When the diaphragm gave way through its whole thickness, and near to its insertion into the ribs, then the matter came in contact with the lower surface and lower edge of the lungs, also with the inner surface of the ribs and intercostal muscles. Then these began to ulcerate together, or at the same time; but as the external muscle and skin upon the ribs were still remaining to ulcerate, it retarded the matter's coming that way, and the lungs having been exposed with the intercostals, they gave way nearly with these

muscles, and therefore the abscess, of course, first opened, and it may be said externally into the cells of the lungs, or into any cavity where a continuation of these adhesions could not precede a suppuration, as it could not in the cells of the lungs:—they are to be considered as external parts with many small ones.

“He had, besides, two other very large abscesses in the liver’s substance, with many small ones, that were in contact with the diaphragm, one of which was almost come in contact with the surface of the lungs, so that the diaphragm was nearly gone at this part. As the seat of the disease was in the liver originally, and the lungs only affected as the other surrounding parts were, and as we had not the least conception of this, I enquired, after his death, whether he ever had any complaint of a pain in his shoulder. They told me he had the rheumatism pretty severely in his right shoulder since he had this complaint.”—*Hunterian MS., Dissections of Morbid Bodies*, No. 154, p. 252.

1399. Parts of a lung and liver, the corresponding surfaces of which were adherent through the medium of the diaphragm. An abscess which formed between the liver and the diaphragm made its way by a large ulcerated aperture through the diaphragm and the adherent part of the lung. The cavity of the abscess is exposed by separating the surrounding adhesions between the liver and the diaphragm, and turning the liver downwards. Part of its internal surface is formed of a smooth layer of lymph deposited on the liver; the rest has a flocculent sloughing appearance. The substance of the lung around the ulcerated aperture in its base, through which the fluid of the abscess was discharged, appears to have been infiltrated with serum and pus.

The patient, a man fifty years old, had signs like those of acute pneumonia, with purulent expectoration, but the chief seat of pain was in the right hypochondrium. A short time before his death he was seized with bilious vomiting, and the expectoration of fetid pus. There were tubercles, and tuberculous cavities, in the lungs.

The liver was large, and its substance was of a pale yellow colour.

From the Museum of George Langstaff, Esq.

5. Cancer in the Liver.

5 a. Hard Cancer.

1400. Portion of the liver of a woman who had carcinoma of the breast for several years. On one surface of the specimen is the section of a round

tumour imbedded in the healthy substance of the liver, and presenting the characters of the common hard cancer of the breast, pale, compact, glistening, and somewhat transparent, with traces of shining white fibres scattered through its substance.

From the Museum of George Langstaff, Esq.

5 b. *Medullary Cancer.*

1401. Section of a liver, and of several large, round, firm, and compact, but not hard, cancerous tumours imbedded in it. The vessels of the liver have been injected, and its texture looks healthy; but none of the injection appears to have entered the substance of the tumours.

From the Museum of Sir A. P. Cooper.

1402. A similar specimen. The injection appears to have passed into a few vessels in the morbid substance, which is also traversed by some branches of the hepatic veins of considerable size.

From the Museum of Sir A. P. Cooper.

1403. A similar specimen, dried, and showing more clearly the few blood-vessels passing into the morbid substance.

From the Museum of Sir A. P. Cooper.

1404. Section of a liver, greatly enlarged by the growth of many soft filamentous medullary tumours in it. Its external surface is smooth, and none of the tumours project beyond it, but the outlines of many of them can be seen through the external investments of the liver. The blood-vessels have been partially injected, and the tumours appear more vascular than the intervening substance of the gland.

From a woman, fifty years old, who, for many months had obscure signs of disease of the liver. A natural quantity of bile appeared to be secreted.

Presented by John Howship, Esq.

1405. Section of a liver, in which there are numerous medullary tumours, soft,

flocculent, and with blood effused in them. The surface of the liver is nodulated by the tumours projecting from it, and false membrane is attached to it in several places.

The patient, a man sixty-five years old, had signs of diseased liver for many years. A few months before his death the liver became very large, jaundice and ascites supervened, and he occasionally vomited blood. After death, signs of recent acute peritonitis were found, and the vena cava and many of its branches were full of medullary matter.

From the Museum of George Langstaff, Esq.

1406. Portion of a liver, containing several tumours, probably of a medullary kind, of which some are softened. *Hunterian.*

1407. Portion of a liver, in which are numerous round and irregular masses of a soft, probably medullary, substance. The masses nearly fill the liver, and project upon its surface: many like them have been removed from smoothly circumscribed cavities in its substance, in which they were imbedded; some appear to be surrounded by distinct membranous capsules. *Hunterian.*

1408. Another portion of the same liver. *Hunterian.*

5 c. Melanotic Variety of the Medullary Cancer in the Liver.

1409. Sections of a liver, and of several round masses of soft, spongy, filamentous, medullary and melanotic substance imbedded in it. The substance of the liver immediately surrounding each mass appears condensed, so as to form a kind of thin capsule around it: the rest of the liver is healthy.

From the same patient as the tumour in the axilla, No. 286.

From the Museum of George Langstaff, Esq.

1410. Sections of a liver, in which are melanotic deposits of various sizes, from

the minutest dots to masses of nearly an inch in diameter. The greater part of the melanotic matter appears to have been deposited in soft medullary tumours, which were originally pale, but are now of various shades, from pale grey to black, according to the quantity of the black matter which they contain.

From the Museum of George Langstaff, Esq.

1411. A portion of the liver of the same woman as the melanotic eye, No. 2258. It contains two circular masses of melanotic substance, both of which are completely black; one of them is one-eighth, the other two-thirds, of an inch in diameter. The rest of the liver appears healthy.

From the Museum of George Langstaff, Esq.

6. *Tubercle in the Liver.*

1412. Portion of the liver of a woman, through the whole of which minute tubercles are thickly scattered. The intervening substance was paler than is natural, and presents an appearance of numerous small cysts in it, like sections of minute hepatic ducts dilated.

Hunterian.

1413. Portion of liver, from a patient who died with pulmonary phthisis. Minute tubercles are thickly scattered through its substance, and the intervening tissue exhibits fatty degeneration.

From the Museum of George Langstaff, Esq.

1414. Part of the liver of a baboon, in which there are several circumscribed deposits of pale, firm, tuberculous matter, of various sizes and forms. Most of them lie immediately beneath the capsule of the liver.

From the Museum of George Langstaff, Esq.

1415. Part of the liver of an aguti, in which there are numerous small masses of a white, probably tuberculous, substance.

Hunterian.

7. *Entozoa in the Liver.*

1416. Part of the liver of a woman, containing an enormous cyst which was filled with acephalocyst hydatids. The cyst measures, in its present collapsed state, nearly nine inches in diameter. It is formed of tough tissue, a line in thickness, and rough with lymph deposited upon its inner surface. Part of the liver is shown expanded upon the cyst, and the diaphragm is adherent to its surface. Numerous hydatids lie beneath it, and the largest of them, inverted, has its inner surface beset with minute cyst-like bodies, probably groups or clusters of echinococci. *Hunterian.*

1417. Several acephalocyst hydatids of various sizes, from a woman's liver.

Hunterian.

1418. Acephalocyst hydatids, from a human liver.

Hunterian.

1419. A single acephalocyst hydatid, from a human liver.

Hunterian.

1420. Part of a liver, and of a cyst formed in its substance, which cyst contained an acephalocyst. The cyst, when distended, must have been at least six inches in diameter. Its walls are a line in thickness; it was externally closely attached to the substance of the liver (of which, however, very little is preserved) and to the diaphragm; where these attachments have been removed its external surface is smooth and finely flocculent. Internally the surface of the cyst is uneven: on many parts it is coarsely nodulated; and on many, thin films and shreds of lymph are attached to it.

From the Museum of George Langstaff, Esq.

1421. The acephalocyst hydatid from the cyst last described.

From the Museum of George Langstaff, Esq.

1422. Portion of a liver, at the border of which, and partly imbedded in its

substance, is a thick and tough-walled hydatid cyst, of spheroidal shape, measuring nearly two inches in its chief diameter.

Presented by Joseph Swan, Esq.

1423. Portion of a liver, with a section of a spherical cyst imbedded in and closely adherent to its substance. The walls of the cyst are half a line in thickness, fibrous, shining, tough, and compact. The cavity of the cyst contains a substance like mortar. It is probably a cyst in which acephalocyst hydatids died, and had earthy matter deposited among their remains.

From the Museum of John Heaviside, Esq.

1424. A similar preparation. The walls of the cyst have been exposed by removing the surrounding part of the liver; they are thicker and harder than those in the preceding specimen, and the mass of mortar-like substance which the cyst contains is more compact.

From the Museum of George Langstaff, Esq.

1425. Portion of a liver, near the border of which is a globular cyst, with thin tough walls, having earthy matter abundantly deposited in and upon them, and containing the broken and shrivelled remains of an acephalocyst hydatid.

From the Museum of George Langstaff, Esq.

1426. An acephalocyst hydatid from a liver: it was discharged through the lung.

Hunterian.

This specimen was probably taken from a patient whose case is recorded in "A case of hydatids discharged by coughing, related in a letter from John Collet, M.D. . . . to Dr. Baker," in the "Medical Transactions, published by the College of Physicians in London," vol. ii., p. 486. London, 1772. 8vo. The patient was a lady, thirty-seven years old. About four years before the discharge of hydatids commenced her health began to decline; she had oppression of the breath, slight œdema of the ankles, and cough. After these symptoms, in the course of four months she coughed up 135 hydatids, all ruptured, some tinged with blood. At the time of the publication of her history she appeared to be recovering. The relation of the case is followed by some general remarks on hydatids, several of which remarks, Dr. Baker says, he owed "to the favour of Mr. John Hunter."

1427. The liver of a monkey, to the surface of which are attached several large transparent membranous cysts, each of which contains one or more acephalocyst hydatids. *Hunterian.*
1428. Portion of the liver of a cat, in the substance of which, and intimately united to it, is a thin opaque cyst containing a single acephalocyst hydatid. *Hunterian.*
1429. Another portion of the same liver, containing a similar cyst and hydatid. The cyst is larger than in the preceding specimen, and projects on the surface of the liver, where a part of it was covered only with thickened peritoneum. *Hunterian.*
1430. A large cyst, from the liver of a lion, which contained numerous acephalocyst hydatids broken and rolled up. The walls of the cyst are of dense texture, and a line thick; their external surface is uneven, with portions of lymph adhering to it, and their interior is roughly furred with lymph. *Hunterian.*
1431. A portion of the liver of a pig (?), in which there is a thin globular cyst, containing a single acephalocyst hydatid. *Hunterian.*
1432. Portion of a thick cyst, from the liver of a zebra. Its internal surface is lined with a thick uneven layer of soft, pasty, yellowish substance, in which small acephalocyst hydatids are imbedded. The depressions from which many of the same kind have been detached are also shown.
Presented by the Council of the Zoological Society.
1433. Portion of the liver of some small animal, attached to the surface of which there is a transparent membranous globular cyst containing an hydatid. *Hunterian.*
1434. Another portion, apparently of the same liver, with a similar cyst not opened. *Hunterian.*

1435. Portion of the liver of some small animal, on the surface of which, and partly imbedded in its substance, there are several transparent membranous cysts containing hydatids. *Hunterian.*

1436. Portion of the liver of some animal, in which are numerous very thin-walled cysts containing acephalocyst hydatids of various sizes. *Hunterian.*

1437. "A portion of a cyst, from a liver studded with hydatids."—*Hunterian MS. Catalogue.*

8. *Diseases of the Blood-vessels of the Liver.*

1438. Section of a liver, in which one of the large branches of the hepatic veins contains two nodulated masses of hard earthy substance, irregular in form, and nearly half an inch in their chief diameter. They were probably formed in clots of blood. They did not adhere to the interior of the vein. The texture of the liver (the blood-vessels of which are partially injected) has an unnatural appearance, resembling in some degree that existing in cirrhosis. A layer of tough false membrane has been reflected from the peritoneal surface.

The patient was a man sixty years old, who had often been tapped for ascites. Towards the close of his life "black jaundice" came on.

From the Museum of George Langstaff, Esq.

1439. Two portions of bone-like substance, flattened, but branching like blood-vessels, from the liver of a sheep. They were probably formed in obliterated blood-vessels. *Hunterian.*

Specimens of Diseases of the Liver in other parts of the Museum:—

Nos. 254, 268, 289, 1115, 1383.

SERIES XXIX.—DISEASES OF THE GALL-BLADDER AND DUCTS.

1. *Hypertrophy.*

1440. Parts of the liver and gall-bladder of an ox. No cystic duct could be traced; and the gall-bladder was filled with pale fluid, like white of egg, indicating that its duct had been long obstructed, if not obliterated. The coats of the gall-bladder are a quarter of an inch thick, and exhibit, at the part next the liver, several partial dilatations into sacculi, like those which are formed in the urinary bladder in cases of long-continued obstruction of the urethra.

From the Museum of George Langstaff, Esq.

2. *Thickening, Induration, Contraction, and other effects of Inflammation.*

1441. Part of a duodenum, with the gall-bladder and ducts. The gall-bladder is contracted into the form of a nearly cylindrical pouch, half an inch in diameter: its coats are thickened and indurated, and it is full of calculous matter. The cystic duct appears to be obliterated. The hepatic ducts and duodenum are of ordinary size and healthy texture.

Presented by Sir William Blizard.

1442. A gall-bladder, thickened and contracted like that in the last described preparation, and containing a few fragments of biliary calculi.

1443. A dried gall-bladder of very small size, and having an extensive deposit of earthy matter, like plates of bone, in its coats. It is probable that previous to this deposit its coats were diseased like those of the two specimens last described.

Presented by Sir William Blizard.

3. *Effects of Calculous Concretions.*

1444. A gall-bladder, dried, with several biliary calculi adhering to its coats, and closely fitted to each other.

From the Museum of Sir A. P. Cooper.

1445. A gall-bladder, the mucous membrane of which has lost nearly all the naturally reticulated arrangement of its surface, and is in some places depressed, as if by the lodgment of calculi. The neck, also, of the gall-bladder is dilated.

Hunterian.

1446. A gall-bladder, inverted. It had a large calculus in its fundus, through the influence of which its inner surface has lost its reticular structure and appears delicately fasciculated, as if by the development of bundles of muscular fibres beneath it. On some situations, also, fringes of pointed processes, like large villi and papillæ, are raised from the mucous membrane.

Hunterian.

1447. A gall-bladder, with two large calculi distending it just above the cystic duct. In other parts its walls are thin, though not distended; its inner surface is not reticular, but fasciculated by muscular fibres strongly developed beneath it. The cystic duct is of natural size.

Hunterian.

1448. A gall-bladder, greatly distended, fasciculated, and having small portions of its smooth mucous membrane depressed in shallow pits between the strongest fasciculi. A large oval calculus, of pure white cholestearine is fixed in the lower part of the gall-bladder, just above the commencement of the cystic duct. At the fundus also, there is a pouch, like a partial dilatation of its coats, in which, probably, the calculus was contained before it passed into its present position.

From a gentleman, eighty-one years old. No signs of the presence of the calculus

were observed. The gall-bladder was filled with colourless transparent mucus. The patient's urinary bladder and enlarged prostate are preserved in No. 2497.

Presented by William Lawrence, Esq.

1449. A gall-bladder, dilated, thickened, and indurated, smooth on its internal surface, and containing seven large tuberculated white calculi, one of which, nearly an inch in diameter, is tightly impacted in its cervix, and completely obstructs the passage into the cystic duct.

The patient, a gentleman sixty years old, died with strangulated hernia.

From the Museum of John Heaviside, Esq.

1450. A gall-bladder, with adjacent portions of the liver, duodenum, and other parts. The gall-bladder is nearly filled by a large white nodulated calculus; its coats are thickened, contracted, and adherent to all the surrounding organs. A bristle is passed through the cystic and common biliary ducts. There are numerous small black spots, not clearly defined (as those of melanosis usually are), in the liver, the mucous membrane of the duodenum, the pancreas, and other tissues. *Hunterian.*

1451. A gall-bladder, containing a smooth, oval calculus, formed of white glistening cholestearine, around which its coats are contracted, indurated, and opaque.

From the Museum of John Taunton, Esq.

1452. A similar specimen, in which the contracted gall-bladder is narrow, elongated, and full of smooth white calculi.

The patient had a large calculus in his urinary bladder, and committed suicide.

From the Museum of George Langstaff, Esq.

1453. Part of a liver, with the gall-bladder thickened, and closely contracted upon a nearly spherical calculus, which measures an inch and a quarter in diameter.

Presented by Sir William Blizard.

1454. The gall-bladder of a woman nearly seventy years old. It is thickened,

and completely filled with a large and a small calculus. The larger calculus is of a nearly regular oval form, and measures an inch and three-quarters, and an inch and a half, in its two chief diameters.

From the Museum of John Howship, Esq.

1455. A gall-bladder, with the adjacent portions of the liver and duodenum. The gall-bladder is closely contracted around two biliary calculi; its coats are a line and a half in thickness; all their tissues are consolidated and indurated, and its outer surface is adherent to the duodenum.

From the Museum of Sir A. P. Cooper.

1456. A gall-bladder, the coats of which are nearly a quarter of an inch thick, and indurated. Its internal surface is coarsely ulcerated and flocculent. It was filled with the collection of calculi of various sizes which lie below it

The liver of the patient was full of cancerous tumours, and nearly filled the abdomen; and similar tumours were found in the diaphragm, omentum, and pancreas.

From the Museum of George Langstaff, Esq.

1457. A gall-bladder, with its ducts. The cystic duct is distended by a calculus to a diameter equal to that of the gall-bladder, of which it thus appears as if it were a part. The fundus of the gall-bladder looks as if the calculus had been lodged in it for some time before it was forced into the cystic duct.

Hunterian.

1458. Portion of liver, with the gall-bladder and ducts. The trunks of the hepatic ducts are dilated by several large brown biliary calculi; a small one of the same kind lies in the cystic duct, and several in the common duct; but there are none in the gall-bladder, though it is dilated. The coats of all the ducts, as well as those of the gall-bladder, are thickened.

From the Museum of John Howship, Esq.

1459. Part of a duodenum, with the common bile-duct. A large oval calculus is tightly fixed in the extremity of the duct: a portion of it projects into the duodenum through the dilated orifice of the duct. The whole

length of the duct is dilated, and both its coats and those of the gall-bladder are thickened.

The patient was a very large woman, seventy years old. For nearly six months before death she had been subject to spasmodic pains of the stomach, which came on with shivering, like an ague-fit, continued from half an hour to an hour, and were succeeded by unnatural heat. To these were added in the last month of life frequent vomitings and retchings, great thirst, and a deep jaundice-colour of the skin. She was occasionally during this month better than before it; but sometimes the spasms were more severe, and the pain extended over a greater part of the abdomen. Three days before death she was suddenly seized with unusually severe shivering and pain, which extended quite round the abdomen, and, without remission, seemed to grow worse till she died.

The liver was found, after death, pale, soft, and fragile; the gall-bladder containing numerous small angular calculi; both it and all the bile-ducts were distended, and all their coats were greatly thickened. The stomach appeared healthy.

From the Museum of John Howship, Esq.

1460. A gall-bladder, with parts of the liver, duodenum, and stomach. In the duodenum, about an inch and a half from the pylorus, there is a large ulcerated aperture, with thin and flocculent edges, through which a calculus passed from the gall-bladder into the intestine, as shown probably in No. 1182. The gall-bladder is adherent all round the margins of the ulcer: its coats are thickened, indurated, and irregularly contracted. There are dark spots both on the coats of the gall-bladder and on the mucous membrane of the duodenum, as if they had been acted on by the digestive fluid.

From the Museum of John Howship, Esq.

1461. Biliary ducts, together with a cyst, containing a calculus two-thirds of an inch in diameter. The cyst is placed between the cystic and hepatic ducts, adherent to both, but not communicating with either. Its walls are about half a line in thickness, tough, uneven, and closely applied upon the calculus, which, it must be supposed, passed by ulceration from the gall-bladder, and had a cyst formed around it among some false membrane. All the bile-ducts are dilated and thin.

Hunterian.

Specimens of Diseases of the Gall-Bladder and Ducts in other parts of the Museum:—

Nos. 5, 1182.

SERIES XXX.—DISEASES OF THE PANCREAS.

1462. Section of a pancreas, considerably enlarged, and almost wholly converted into fat. The fat has the ordinary characters of soft human fat; but, in the arrangement of its lobules, resembles the lobules and acini of the pancreas. The pancreatic duct is pervious, and appeared healthy.

From a middle-aged man, who died with typhus fever, and was deemed healthy before he was seized with it.

The other section of the pancreas is in the museum of St. Bartholomew's Hospital.

Presented by James Paget, Esq.

- 1462A. Section of a pancreas, in the middle of which is a large oval mass of hard cancer. Scarcely any trace of the pancreas can be discerned around the tumour. The head, or right end, of the pancreas appears healthy; but the left end is very small, atrophied, and, apparently, in a state of fatty degeneration, like the preceding specimen.

Presented by James Paget, Esq.

- 1462B. Section of a pancreas, in which there are numerous melanotic growths of various sizes and shapes. The texture of the gland around and between the growths appears healthy.

The specimen was taken from a girl, twenty years old, whose eye, containing a melanotic growth, was removed three years before her death. There were great masses of melanosis in her liver (a cast of which is preserved); and melanotic deposits in the skull, skin, and many other parts. The other section of the pancreas, the melanotic eye, and some other parts, are preserved in the museum of St. Bartholomew's Hospital. The case is related by Mr. Lawrence in the "London Medical Gazette," vol. xxxvi., p. 961. London, 1845.

Presented by William Lawrence, Esq.

SERIES XXXI.—DISEASES OF THE LACTEAL AND LYMPHATIC
VESSELS AND GLANDS.

1. *Enlargement and Induration.*

1463. The mesentery of a child, with enlarged lacteal glands. The blood-vessels are minutely injected.

From the Museum of Sir A. P. Cooper.

1464. Portions of small intestine and mesentery. The mesenteric glands are greatly enlarged, and the lacteal vessels on their surfaces, and passing from them to the intestine, are distended with an opaque white substance like chyle. Many of the vessels thus distended are traced into the coats of the intestine.

From the Museum of Sir A. P. Cooper.

1465. Subcutaneous lymphatic glands, which are described in the Hunterian MS. Catalogue as having gone through the processes of inflammation, suppuration, and ulceration, without being destroyed. They were taken from a Negro, and it will be observed that in the cicatrix over the diseased glands the black pigment of the epidermis has been reproduced.

Hunterian.

1466. Sections of three lymphatic glands, removed, together with the thickened and indurated tissue around them, from over the lower part of a man's parotid gland. The deepest of the three glands had a curd-like fluid in its centre.

Hunterian.

2. *Calcareous deposits in Lacteal and Lymphatic Glands.*

1467. A trachea, with some bronchial glands adherent to its bifurcation, enlarged and full of earthy and black matter.

From the Museum of Sir A. P. Cooper.

1468. A similar specimen. *From the Museum of George Langstaff, Esq.*

1469. Portions of lymphatic glands adhering to the exterior of a large artery, and having earthy matter abundantly deposited in them. *Hunterian.*

1470. A portion of large intestine, to which is attached a large irregular mass of earthy matter formed, probably, in diseased mesenteric glands.

Presented by the Trustees of the British Museum.

3. Cancer of Lymphatic Glands.

1471. Lymphatic glands, from an anterior mediastinum, enlarged, indurated, and forming a great irregular mass, which surrounds the lower part of the arch of the aorta, and covers the front and sides of the trachea and large bronchi. Sections of some of them, about the bifurcation of the trachea, exhibit small masses of dense white fibrous substance, like hard cancer, which are imbedded in the blackened substance of the glands. Other glands appear uniformly hardened, like masses of hard cancer. The bronchi are compressed; the aorta retains its natural size.

From the Museum of George Langstaff, Esq.

1472. Lymphatic glands, from a man who died after the removal of a medullary testicle. The glands form one mass, extending from below the renal arteries, by the sides of the aorta to its arch. The part of the mass which was within the abdomen is six inches in width; that in the posterior mediastinum about half as wide. A portion of intestine is adherent to the front of the part from the abdomen, and the vena cava inferior is imbedded in it.

Presented by G. J. Guthrie, Esq.

1473. Mediastinal lymphatic glands, enormously enlarged by medullary cancerous disease, and compressing the parts adjacent to them. The enlarged glands are united into a mass six inches in diameter. Sections through them at various parts show that their natural texture is

completely displaced by the morbid substance, while the interspaces between some of them, as well as some of the glands themselves, are coloured with black matter. The parts chiefly compressed by the diseased mass are the œsophagus and the lower part of the trachea; these are widely separated from each other, and the disease has protruded into both of them through large ulcers of their walls. The arch of the aorta and the left vena innominata, are also imbedded in the surface of the mass; the left bronchus and left pulmonary vessels are surrounded by it, and the canals of all are narrowed.

The patient was thirty-four years old. The disease had been observed for twelve months; its chief symptoms were palpitation of the heart, and extreme dyspnœa, with frequent threatenings of suffocation.

From the Museum of George Langstaff, Esq.

4. *Tubercle of Lacteal and Lymphatic Glands.*

1474. Portion of small intestine, with tuberculous ulcers of its mucous membrane, and some of its large lacteals full of opaque-white tuberculous matter. The mesenteric glands were also diseased. *Hunterian.*

1475. Portions of the small intestine and mesentery of a child. The mesenteric glands are filled, and greatly enlarged, with deposits of firm tuberculous matter. *From the Museum of Sir A. P. Cooper.*

1476. Two enlarged lymphatic or lacteal glands, from a large white monkey that died tuberculous. *Hunterian.*

1477. The tongue, larynx, trachea, and larger bronchi, with the bronchial and cervical lymphatic glands, of a boy who died with phthisis. All the glands are enlarged, and many of them contain tuberculous matter. The bronchi are compressed and flattened by the glands around them.

From the Museum of George Langstaff, Esq.

Specimens of Diseased Lacteals and Lymphatics in other parts of the Museum :—

Nos. 284, 1162, 1169, 1185, 1224, 1230.

SERIES XXXII.—INJURIES AND DISEASES OF THE SPLEEN.

1. *Injuries by Violence.*

1478. A spleen, ruptured across the whole of its outer surface, and deeply into its substance.

The patient, a man fifty years old, was kicked by a horse on the left side of the chest, sixty-four hours before death. All the ribs of that side were broken, except the first two and the twelfth, and some of them were driven through the pleura and lacerated the lung. The diaphragm also was lacerated, but not torn through. The abdomen contained a considerable quantity of blood.

Presented by Joseph Swan, Esq.

1479. "The spleen of a man who received a hurt, who became faintish, and low, and died. Upon opening the belly there was found a great deal of extravasated blood, and on searching for the wounded vessel we found the spleen broke."—*Hunterian MS. Catalogue.*

1480. A spleen, measuring eleven inches in length, six in breadth, and four in thickness. It was removed from a gentleman, of whose case Mr. Hunter has left the following account.

"Sir Patrick Crawford, about six months before his death, observed a fullness or hardness in his left side, which increased to a considerable size. From every circumstance of situation and direction, it appeared to be the spleen. He took great quantities of medicines for it, especially the cicuta, but to no effect. Although never a lusty man, yet he lost flesh very considerably, becoming extremely thin, while, at the same time, his appetite was good, and perhaps indulged himself too much both in eating and drinking.

"I was consulted to say what this swelling was.

"The swelling was oblong, situated obliquely in the left side, one end downwards and forwards, the other the reverse. As he was very thin, it was easily felt; its outer edge or boundaries could be traced almost all round, viz., its under or posterior edge, lower anterior end, and upper edge. It was about six inches broad, with its lower end below the navel, and on the right of the linea alba: from thence, passing upwards to

under the lower edge of the thorax, where it could not be followed by the hand. Its anterior edge at the upper part was nearly as far forwards and upwards as to be within an inch of the left xyphoid cartilage, which appeared then to me to be too far forwards and upwards for the spleen; there it became a little obscure to the feel, independent of its going under the cartilages of the ribs, which I then could not account for (considering it as spleen), and which was explained when the body was opened.

"The lower end was evidently loose, for it could be shoved upwards and downwards, and when erect it became lower than when in an horizontal position.

"Why should the spleen, by being simply enlarged in size, without any apparent diseased texture, produce such an atrophy?"—*Hunterian MS., Cases in Surgery*, p. 746.

"*The Appearances upon opening the Body of Sir Patrick Crawford.*

"On opening the belly the first thing that appeared was the spleen. It occupied almost the whole of the left side of that cavity, and which was the solid mass that was so plainly felt before death. It was of a natural colour and consistence to the feel, but was increased about twelve times its natural size, having a few adhesions to the side of the belly near the upper part.

"Its lower end passed over the colon, and lay loose among the small intestines. Its upper end lay upon the great arch of the stomach, pressing it towards the middle of the body; and this part was covered by the left lobe of the liver, which gave the obscurity here to the feel, before death. We found a small quantity of water in the cavity of the belly. There was a stone in the gall-bladder, but the liver appeared sound. The kidneys could not be said to be perfectly sound, although not much diseased, being rather flaccid in their substance.

"The stomach and whole intestines were perfectly sound to appearance, and no worms were to be found in any of them.

"The contents of the chest, viz., the heart and lungs, were perfectly sound.

"On examining the cavity of the abscess, which appeared on the upper part of the calf of the leg, a few days before death, and which had been opened, and proved to contain a large quantity of bloody pus, it appeared to be most probable that a small artery had burst close to the great artery of the thigh as it passed into the leg; for this principal artery was almost laid bare for some way, and the blood had worked its way down the leg superficially, where it was opened. This last complaint, if he had lived a few days longer, would, very probably, have led to a series of mischiefs; most probably the large artery must have been taken up to prevent the future bleeding, and which, probably, would have led to amputation, all of which he could not have borne."

—*Hunterian MS.: Dissections of Morbid Bodies*, p. 213, No. 188.

In the examination a small detached tumour, not noticed in this description, was found loose in the cavity of the belly. It is preserved in No. 314.

The specimen is represented in "Baillie's Morbid Anatomy," Fasc. vi., pl. 3.

2. *Abscess of the Spleen.*

1481. Portion of spleen, showing parts of the uneven ragged boundaries of two collections of pus in it. Its capsule is, in one part, nearly a quarter of an inch thick, and very hard. *Hunterian.*

3. *Cysts in, or involving, the Spleen.*

1482. A spleen, at one end of which, and partly imbedded in its substance, there is a globular cyst, such as may have contained hydatids, about three inches in diameter, with walls from half a line to two lines thick, and formed of a tough pale tissue in parts of which there are plates of earthy matter. The interior of the cyst is nearly smooth; a portion of liver is adherent to its external surface. The spleen is of natural size, but appears to have been of soft texture.

From the Museum of Joshua Brookes, Esq.

1483. Portion of spleen (from an ox?), on the surface of which is a small, thin-walled, transparent cyst. *Hunterian.*

4. *Cancer of the Spleen.*

1484. A spleen, of which the capsule is uniformly thickened, and at one side of which there is a deep irregular loss of substance, from what was considered to be cancerous ulceration.

From the Museum of John Heaviside, Esq.

5. *Tubercle of the Spleen.*

1485. Portion of a spleen, in which very minute, round, pale, and yellowish tubercles are thickly scattered. *Hunterian.*

1486. A spleen, in which small oval and round masses of tuberculous matter, from half a line to a line in diameter, are very thickly scattered. The intervening substance, the blood-vessels of which have been injected, appears healthy.

From a child, ten years old, which had been ill for about two months with signs of disordered digestive organs, and of intermittent fever. Tubercles were found in the liver.

From the Museum of George Langstaff, Esq.

1487. Section of a spleen, enlarged, and full of similar tubercles.

From a child, two years old, in which the only sign of disease was diarrhoea, and in which this is said to have been the only morbid change.

From the Museum of John Taunton, Esq.

6. *Entozoa in or upon the Spleen.*

1488. The spleen of the man whose case is described at p. 49, and from whose abdominal cavity several large hydatid cysts were taken. (See Nos. 1132-3-4.) On its surface, and partly imbedded in it, are several thick-walled cysts of tough texture, which contained acephalocyst hydatids. The largest cyst has been emptied; its internal surface is uneven, and has flakes of yellowish lymph deposited on it. In another cyst near it, and thickly lined with lymph, there is a mass, composed of rolled-up membranes of collapsed hydatids; and in another (at the back of the preparation) similarly rolled-up membranes have a deep amber colour. In a fourth are several hydatids, presenting their ordinary appearance.

Hunterian.

1489. One of the amber-coloured hydatid-membranes, from the preceding specimen, inverted, to show its inner surface thickly studded with minute cyst-like bodies of the same colour.

Hunterian.

1490. Acephalocyst hydatids, from one of the cysts on the spleen last described. One of them is inverted, and its inner surface is beset with minute white bodies, probably groups of echinococci.

Hunterian.

7. *Diseases of the Capsule of the Spleen.*

1491. A spleen, the capsule of which is generally thickened, and, in nearly every part, thickly beset with plates and nodules of a substance like cartilage.

Presented by George Chandler, Esq.

1492. Sections of an injected spleen, the capsule of which is irregularly thickened, measuring, in different parts, from a line to an inch and a quarter in thickness, composed of a tough, hard, and compact tissue like fibro-cartilage. A small portion remains healthy. The spleen itself also appears healthy.

From the Museum of Sir A. P. Cooper.

1493. The capsule of a spleen, a part of which is greatly thickened, and converted into a substance like fibro-cartilage, with bone-like matter deposited in it.

From the Museum of Sir A. P. Cooper.

1494. A portion of the capsule of a spleen, dried, with a thin plate of bone-like substance in it.

Hunterian.

SERIES XXXIII.—DISEASES OF THE THYROID GLAND.

1. *Various Enlargements: Bronchocele.*

1495. A bronchocele, consisting, apparently, in a simple increase of the thyroid gland to about twice its natural size. The right lobe is more enlarged than the left. The trachea is not affected.

From a girl, six years and a half old, in whom the disease was first observed about eight months before she died of hydrocephalus. The tumour had been much larger than it was at the time of death.

Presented by J. G. Perry, Esq.

1496. A bronchocele, from a young person. The thyroid gland is enlarged to about twice its ordinary size, and more in the right lobe than in the left. Sections of it show that its substance is more than naturally divided into lobes by thin, pale, fibro-cellular partitions; and that its structure is in many places consolidated, while in others it retains nearly a natural appearance. The change of structure, like the enlargement, is greater on the right than on the left side.

From the Museum of Sir A. P. Cooper.

1497. An enlarged thyroid gland, with the adjacent organs. The whole of the gland is enlarged, but the right lobe much more than the left; it has extended round the trachea and œsophagus, passing backwards between the latter and the carotid arteries till its lobes very nearly meet. Its surface is uneven, marked by deep impressions, in which some of the muscles of the hyoid bone lay. The superior thyroid arteries are very large, and on the right side the inferior thyroid artery is twice as large as usual: the left inferior thyroid is not shown. *Hunterian.*

A cast of the head and neck of this patient is preserved.

1498. A thyroid gland, enlarged, so as to form a mass of nearly spheroidal shape, six inches in diameter, and five inches in depth, which almost surrounds and conceals the larynx, trachea, and œsophagus. The enlarged gland is deeply lobed on its surface, and firm. On the surfaces of its sections some of its natural structure is still apparent: but, for the most part, its cells are enlarged; some of them are filled with yellow transparent jelly-like substance; a few are empty; and many of the largest contain a solid white substance, either opaque and soft, or transparent and firm like cartilage. The œsophagus, trachea, and other adjacent parts, are compressed.

From the Museum of Sir A. P. Cooper.

1499. A thyroid gland, with some of the adjacent parts. The right lobe of the gland is converted into a hard spheroidal mass, about five inches in diameter, and three and a half in depth, which in its growth has

pressed the trachea and œsophagus inwards, and the carotid artery and jugular vein far outwards, and has expanded the sterno-cleido-mastoid muscle in a thin pale layer upon its outer surface. It is composed of solid substances of various appearance and consistence, some resembling cartilage, others like firm tuberculous matter, irregularly mingled together; and it is invested by a thin layer of fibro-cellular tissue. The left lobe is smaller than is natural.

The specimen was taken from a lady eighty-one years old. She first noticed a slight enlargement of the right lobe of the gland when she was twenty-five years old. It increased gradually, and in the last twenty years of her life was painful, sometimes acutely so. The right carotid artery, during life, felt as if it were three times as large as is natural, and used to pulsate very violently, while the pulsation of the left was hardly discernible externally. During the same period the patient suffered from increasing difficulty of swallowing, headaches and giddiness, occasional paroxysms of convulsive cough, and various dyspeptic symptoms. Three months before her death she had partial paralysis of the left leg and left hand; but from this she recovered.

From the Museum of John Howship, Esq.

1500. The left half of a very large bronchocele, with the common carotid artery, and a small part of the larynx and trachea. The enlarged left lobe of the thyroid gland measures between four and five inches in each direction; its form is irregular, and its surface superficially lobed: it is composed of a very firm, lobular, and compact substance, in some parts uniform, in others obscurely fibrous. The carotid artery and internal jugular vein are imbedded in deep grooves upon its anterior part. The superior thyroid artery is enlarged to nearly twice its ordinary size.

From the Museum of John Howship, Esq.

1501. Part of an enlarged thyroid gland, with some of the adjacent organs. The enlargement is produced by a firm, lobular, and obscurely fibrous substance, which occupies the place of nearly all the natural structure of the gland, and in the interior of which there are plates and small masses of bone-like substance.

From the Museum of George Langstaff, Esq.

1502. A thyroid gland, of which the right lobe is converted into a nearly

globular cyst, four inches in diameter. The walls of the cyst, from one to three lines in thickness, present scarcely any appearance of the original structure of the thyroid gland, but are laminated, and have small cavities containing soft grumous yellowish substance in them. The cavity of the cyst contains loose shapeless masses of a soft brownish substance. The left lobe and the isthmus of the thyroid gland are of ordinary size: but a section of the left lobe shows some morbid yellow substance deposited in it.

From the Museum of George Langstaff, Esq.

1503. Part of the right lobe of a thyroid gland converted into a cyst, between four and five inches in diameter. The walls of the cyst are about three lines in thickness, and appear to be composed of the expanded substance of the organ: its internal surface is uneven, deeply seamed and wrinkled, and in many parts covered with adherent flocculent lymph and coagulated blood. The cyst is invested with a tough fibro-cellular capsule, and large branches of the superior thyroid arteries are shown ramifying on its surface.

The cyst was full of coagulated blood, and looked like the sac of an aneurism. During life it was punctured, in consequence of the dyspnœa produced by its pressure on the trachea; a considerable quantity of fluid blood flowed from the wound, and the bleeding continued till the patient died.

From the Museum of George Langstaff, Esq.

1504. A larynx and trachea, with a diseased thyroid gland. The gland is greatly enlarged, and is composed of several distinct lobes of round and oval forms, from one to four inches in diameter, and of which some are connected only by their respective investments of fibro-cellular tissue. The cut surfaces of these lobes show, in every case, more or less of the original structure of the gland; but, for the most part, they are filled with a soft, yellowish, and slightly vascular substance; and in some there are empty cavities. Such a cavity in the largest of the lobes is two inches in diameter, and is surrounded by thick concentric laminæ of firm pale substance, like cartilage, around which is a thin layer of the diseased texture of the gland. One of the superior thyroid arteries is much larger than is usual.

From the Museum of Sir A. P. Cooper.

2. *Cancer of the Thyroid Gland.*

1505. Section of a thyroid gland, and of a larynx and trachea, with some of the adjacent parts. The thyroid gland is greatly enlarged by medullary cancerous disease. It surrounds the trachea, and either it, or diseased lymphatic glands not distinguishable from it, extend downwards to the arch of the aorta, and surround the innominate and right carotid arteries. The trachea is, at one part, extensively ulcerated, and the morbid substance, with a slightly elevated and shreddy surface, protrudes into its cavity. *Hunterian.*

1506. A thyroid gland, with some of the adjacent parts. The natural substance of the thyroid gland cannot be discerned; its place is occupied by a mass of soft, flocculent, medullary substance, which completely surrounds the trachea, and measures about six inches from side to side, and four inches from above downwards. The mass is of an irregularly lobed form, with deep indentations on its surface, in which lay the muscles and other parts that were stretched over it. The trachea, at its upper part, is diminished to half its natural calibre by the pressure of the growth around it, and the larynx is pushed aside. The left carotid artery is pushed outwards, and imbedded in a deep groove at the back of the diseased mass. Enlarged and diseased lymphatic glands are attached to the bifurcation of the trachea.

From the Museum of John Howship, Esq.

Diseases of the Thyroid Gland in other parts of the Museum :—

No. 1103.

SERIES XXXIV.—DISEASES OF THE PERICARDIUM, AND OF
THE HEART AND ITS VALVES.

Sub-Series A. DISEASES OF THE PERICARDIUM.

1507. Section of a heart, exhibiting the effects of recent acute pericarditis. The whole of the pericardium is covered with a layer of soft coagulated lymph, about a line in thickness, the surface of which, raised in thin small intersecting ridges, presents a finely reticulated appearance somewhat resembling that of the interior of the fourth stomach of a calf. About the base of the heart, some thick round columns or soft cords of lymph pass from one pericardial surface to the other.

This specimen was described in the Hunterian MS. Catalogue as "The heart of a man who died of a fever and violent pain and oppression of his breast. The whole heart is covered with gluten, from inflammation, which made the pericardium adhere." And, referring to this preparation in his lectures, Mr. Hunter said, "It appears from observation that some surfaces are more capable of throwing out this matter than others are, or it may be that some surfaces adhere later than others: hence the coagulable lymph is continued longer pouring out: this is very observable in inflammation of the heart. In this preparation, which is of a human heart, you see it furred thick with the coagulable lymph over its whole surface, but no adhesion had taken place."—*Hunterian Reminiscences; by Mr. James Parkinson.* London, 4to, 1833, p. 62.

1508. The heart of an ox, very much enlarged, and invested with a thick layer of recently deposited coagulated lymph, which, like that last-described, presents a coarsely reticular and knotted surface, and some long columns, that connected the pericardial surfaces, but now appear suspended from its surface.

Presented by William Clift, Esq.

1509. The heart of a child, the whole surface of which is covered with a thin and delicately reticular layer of soft lymph. The blood-vessels are injected, and injection appears to have passed in several places into the lymph.

From the Museum of Sir A. P. Cooper.

1510. Section of a heart, on the pericardial surface of which there is a very thin layer of finely reticulated coagulated lymph, like that last described, but not injected. *Hunterian.*

1511. A heart, very much enlarged by the dilatation of all its cavities and thickening of their walls. The tricuspid, mitral, and pulmonary valves, and the lining membrane of the heart, are healthy: the aortic valves are not shown: the inner coat of the aorta is thickened and tuberculated. Both portions of the pericardium are covered with thin layers of reticulated and flocculent lymph, which were closely adherent and, in some parts, appear organized into delicate false membrane.

From the Museum of George Langstaff, Esq.

1512. A heart enlarged after acute rheumatism. The pericardium is everywhere closely adherent: but a portion of its external layer being removed, soft coagulated lymph is shown, as if recently deposited among adhesions of long standing. *Presented by David Dundas, Esq.*

The following letter accompanied the preparation:—

“ DEAR SIR,

“ *Richmond, 18th Aug., 1808.*

“ The preparation of enlarged heart, which I brought to the College a fortnight ago, is to exemplify a disease of that organ which is not described by any author that I am acquainted with, but which, from the number of cases which have fallen under my observation, is, I apprehend, very frequent in this country.

“ The most remarkable circumstance of this disease is its being always connected with, or subsequent to, an attack of acute rheumatism.

“ The patient complains of great anxiety and oppression at the præcordia, has generally a short cough and a difficulty of breathing, which is so much increased by motion, or by any exertion, as to produce an apprehension that the smallest increase of the motion would occasion fatal effects.

“ The difficulty of breathing is also aggravated by taking even a small quantity of food. He prefers lying on the back, complains of great palpitation of the heart, and violent pulsation of the carotid arteries, accompanied with noise in the ears, and giddiness of the head. The action of the heart is often so strong as to be distinctly heard, and to agitate the bed the patient is in so much, that I have counted the pulse of the person by looking at the curtains of the bed.

“ Towards the conclusion of the disease symptoms of water in the chest take place.

The legs become œdematous, and frequently a considerable quantity of water is accumulated in the cavity of the abdomen.

" In some cases the disease has been very rapid in its progress, not lasting above four or six weeks, in others it has run on for one, or even more than two years. I have only seen one person who has recovered, and I have opened nine persons who have died of the disease.

" The heart has been uniformly found much enlarged in bulk: in one case, water was found in the pericardium; in all the others, the pericardium adhered to the heart. The heart itself was sometimes nearly three times the size of a healthy heart. The muscular structure is not increased in thickness beyond what it commonly is, so that its powers of action are not augmented proportionally to its bulk. It has also been generally found of an unusual pale colour, and very soft and tender in its texture.

" I am, dear Sir, your faithful humble servant,

" George Chandler, Esq."

" DAVID DUNDAS."

This letter possesses considerable interest, in that it contains one of the first circumstantial accounts of the connection between rheumatism and diseases of the heart. It is embodied with the histories of several cases in "An Account of a Peculiar Disease of the Heart, by David Dundas, Esq.," which was read before the Medical and Chirurgical Society of London on November 26th, 1808, and published in the 1st volume of their "Transactions," London, 1809.

Of the previous notices of the rheumatic diseases of the heart, the first appears to be that by Dr. Jenner, who, about the year 1788, read a paper on the subject at the Medico-Convivial Society in Gloucestershire. But this paper has been lost, and its contents are unknown. (See Dr. Baron's "Life of Edward Jenner," vol. i., p. 46.) Dr. Baillie (chiefly on the authority of Dr. Pitcairn) alluded to the existence of rheumatism of the heart in the second edition of his "Morbidity Anatomy," published in 1797 (in a note at p. 46). And M. Odier, in his "Manuel de Médecine Pratique," which was first published in 1803, and consists of the substance of lectures delivered by him in 1799 and 1800, spoke plainly, and at some length, of the metastasis of rheumatism to various internal organs, of the signs of the affections of the heart, and of the changes of structure consequent on acute pericarditis. (See pp. 83 and 254, Ed. 1811.)

1513. A heart, with the greater part of the pericardium. The opposite surfaces of the pericardium, through their whole extent, are thickly covered with lymph, of which some is firmly adherent and nearly smooth, as if it were completely organized, while other parts, which appear to have been more recently formed, and in some situations cover the firm smooth deposit, are soft, loosely attached, and have a finely reticular surface. The interior of the heart, and its valves, are healthy, and it has nearly its natural dimensions.

From the Museum of George Langstaff, Esq.

From a woman forty-six years old, who lived intemperately, and had several attacks of acute rheumatism.

From the Museum of George Langstaff, Esq.

1514. Portion of a heart, to parts of the surface of which the opposite layer of the pericardium is firmly adherent by well-organized false membrane.

Hunterian.

1515. Portion of the anterior wall of a heart, with the corresponding part of the pericardium. Both the layers of the pericardium are much thickened and indurated; and their opposite surfaces are beset with shreds of lymph and false membrane, by which they were adherent.

From the Museum of George Langstaff, Esq.

1516. Portion of cardiac pericardium, thickened and extensively ossified. It has been dried and preserved in turpentine.

From the Museum of George Langstaff, Esq.

SERIES XXXIV.—Sub-Series B. DISEASES OF THE SUBSTANCE OF THE HEART.

1. *Hypertrophy.*

- 1516A. Portion of a heart, from near its apex, exhibiting simple hypertrophy of the left ventricle. Its walls are from seven-eighths of an inch to an inch in thickness, and their texture is firm, and strong; the cavity is enlarged in due proportion to the thickness of the walls.

The hypertrophy was the consequence of disease of the aortic valves.

Presented by James Paget, Esq.

- 1516B. A section, cut transversely, from the middle of a heart, and showing both ventricles enlarged and dilated by simple growth. The walls of the left ventricle, in which the hypertrophy is greater than in the right ventricle, are upwards of an inch thick, and very compact and strong.

From a patient who had disease of the aortic valves.

Presented by James Paget, Esq.

- 1516c. A heart, from which the apex has been cut away to show that the cavity of the left ventricle is nearly closed by the fixed contraction of its walls in the *rigor mortis*. It is in the state which some have called concentric hypertrophy; but the thickening of the ventricular walls is only the result of the shortening and swelling of the muscular fibres in the contracted state.

Presented by James Paget, Esq.

2. Atrophy.

1517. Part of the left ventricle of a heart, with the beginning of the aorta. The cavity of the ventricle was very large, but its walls do not exceed four lines in their greatest thickness, and their tissue is very pale and flaccid; there is no accumulation of fat upon them. Near the attachment of the mitral valve, a mass of granular earthy matter, half an inch in diameter, is imbedded in the wall, and extends nearly to its outer surface, from which a layer has been removed to expose the mass more fully. The aortic, and what is preserved of the mitral, valves are healthy. There are deposits of opaque yellow fatty matter in the coronary arteries.

From a man seventy-three years old, who was subject to palpitation of the heart and dyspnoea for many years. The pulse was generally intermittent, his breathing laborious, and occasionally he had paroxysms which seemed to threaten complete asphyxia. The heart's action could be felt over a very wide extent. For the last eight months of his life he had general dropsy. He died suddenly. After death the pericardium contained seven ounces of fluid. The whole length of the aorta was beset with fatty and calcareous deposits. The right side of the heart was deemed healthy. The liver was granulated.

From the Museum of George Langstaff, Esq.

1518. A portion of the left ventricle of a woman's heart. The muscular substance is thin and pale, and is covered with a layer of fat varying in thickness from three to six lines.

Hunterian.

1519. Part of the base of a heart, including the mitral and aortic valves. The

muscular part of the wall of the left ventricle and auricle is very thin and pale, and is so nearly degenerated into fat that it is hardly distinguishable from the thick layer of fat with which it is covered. The valves and the lining membrane of the auricle are thickened and opaque.

From a woman sixty years old, who had long had signs of diseased heart, attended, near the end of her life, with hydrothorax and ascites.

From the Museum of George Langstaff, Esq.

3. *Rupture of the Heart.*

1520. A heart, generally enlarged by the dilatation of its cavities. Its muscular tissue is thin and very pale, and covered with an unnatural quantity of fat. A rupture, in the shape of an oblique rent nearly an inch long, has taken place through the anterior wall of the left ventricle, an inch from its base, and about half an inch from the septum.

The patient was a widow, sixty-two years old, who for some time before her death had been growing corpulent. She had been subject to a cough for fifteen years, which was aggravated in winter, and for the last two years of her life was attended with dyspnoea. The latter sign was increased by exercise, or by lying down. Five days before her death she had a sudden pain across her chest and down her arm, which ceased in a few hours. Two days afterwards she had a similar attack. Her death was almost instantaneous; she was standing and applying some leeches on a sick person, when she dropped down and expired.

There was a large quantity of fluid and coagulated blood in the pericardium. The liver was very large, and some dark coloured blood was effused into its substance near its upper surface.

Presented by Titus Owen, Esq.

1521. Portion of the left ventricle of a heart, the muscular substance of which is pale, flaccid, and nearly covered with a thick layer of soft fat. At the anterior part, by the side of the septum, and about two inches from the apex of the ventricle, there is an irregularly torn aperture through its walls, large enough to admit a writing-quill. At the commencement of the aorta, and in the trunks of the coronary arteries, there are several

large deposits of earthy matter, by one of which the left coronary artery is obliterated.

The patient was a lady sixty-eight years old, corpulent and sedentary, who had suffered dyspnœa for six years before her death. Five months before death she had a slight apoplectic fit, which was succeeded by permanent numbness of the left arm and leg, and increase of the dyspnœa. Her pulse was usually intermittent, hard, and small, and the least exertion nearly produced syncope. Sixteen hours before death she was awakened from sleep by a violent pain in the region of the heart; she became very anxious, and her respiration was hurried. She was bled, and the pain was relieved; but she continued restless, her pulse became weaker, and she suddenly expired.

The pericardium contained, after death, about twelve ounces of dark coagulated blood.

From the Museum of George Langstaff, Esq.

1522. Part of the apex of a heart, exhibiting two small ruptures of the wall of the right ventricle, near the septum. The edges of the apertures are uneven and ragged; the part of the wall through which they pass has only a thin layer of muscular tissue, and, like all the adjacent part, is thickly invested with fat.

The patient was a robust plethoric man, forty-seven years old. Inflammation of the heart ensued during an attack of acute rheumatism of the hands and feet, and he died suddenly on the fourth day. A large quantity of fluid blood was found in the pericardium. The heart was of natural size, and there were no signs of long-standing organic disease; but indications were found of recent inflammation, both within and without the heart.

From the Museum of George Langstaff, Esq.

4. *Partial Dilatation, or Aneurism, of the Heart.*

1523. Portion of the left ventricle of a heart, with an aneurism projecting from the upper part of its posterior wall, near the septum, and just behind the mitral valve. The sac of the aneurism is half-full of laminated and loose fibrinous coagula: its wall is formed only by the endocardium and

cardiac pericardium, distended, thickened, and adherent to the parietal pericardium; its cavity communicates with that of the ventricle by a circular aperture three-fourths of an inch wide, with smoothly rounded margins. Around this aperture the muscular tissue of the heart appears to have been absorbed, and the endocardium is thickened, opaque, white, very tough, and compact. *Hunterian.*

1524. A heart, exhibiting an aneurismal dilatation of a small part of the posterior wall of the left ventricle near the septum, and just below the attachment of the mitral valve. The sac of the aneurism is hemispherical, and nearly an inch and a half in diameter; its orifice is circular, and the lining membrane of the heart around it is irregularly thickened; its exterior is smooth, and crossed by a main branch of the left coronary artery. The left ventricle is generally dilated, and somewhat hypertrophied; its lining membrane is in many places thickened; but the heart is in other respects healthy.

From a woman fifty-two years old, a drunkard, who had signs of disease of the heart for two years.

For the last year of her life she had ascites and general anasarca: and for some days before her death her breathing was extremely difficult, her face suffused, her pulse regular, but very small, and beating 120 times in the minute.

Some further account of the case is published by Mr. Thurnam, in a paper "On Aneurisms of the Heart," in the "Medico-Chirurgical Transactions," vol. xxi., p. 204. London, 1838.

From the Museum of George Langstaff, Esq.

1525. The heart of a goose which died suddenly. An aneurismal pouch extends from the apex of the left ventricle, a slight external constriction marking the line of separation between them. At this constriction a rupture, whose situation is indicated by a curved bristle, took place, and permitted the effusion of blood into the pericardium. The foramen ovale is not closed; a bristle is passed through an aperture above a line in diameter in its centre.

Presented by the Council of the Zoological Society.

1526. A heart, with an aneurism of the left auricle. The mitral and tricuspid

valves are thickened and opaque; the orifices from the auricles to the ventricles are contracted, and both the auricles are generally dilated. A portion of the anterior wall of the left auricle, including the appendix, is further dilated into an oval sac, which extends in front of the commencement of the aorta, to the left border of the pulmonary artery. The walls of the sac are nearly a line in thickness, and contain a layer of muscular fibres; its cavity is full of laminated coagula, and it communicates with the auricle by a large smoothly bordered oval aperture. The opposed surfaces of the pericardium were everywhere closely adherent; parts of the adhesions were ossified; and the whole heart is enlarged.

The patient was fifty-four years old, and had palpitation and dyspnoea for four years before his death. During the last six months of his life these symptoms were very severe, his pulse was usually 100 in the minute, and always irregular, his lips were blue, he had a distressing cough, and his feet and legs were œdematous. Bleeding occasionally relieved him, but he became very emaciated, and died rather suddenly.

From the Museum of George Langstaff, Esq.

5. *Tumours and various Morbid Deposits in the Heart.*

1527. Portion of the right ventricle of a heart, in which there are numerous small bodies, of round and oval forms, adhering among the prominent fasciculi of muscle (*Végétations globuleuses*, Laennec). The largest of them having been opened, presents a central cavity, which was filled with "a kind of glairy mucus," and whose walls are composed of concentric layers of fibrine, or, more probably, of decolorized blood-clot.

Hunterian.

1528. A heart, in which a nearly spherical tumour, an inch and a half in diameter, is attached to the anterior and lower part of the wall of the right auricle, nearly filling its cavity, and projecting into the auriculo-ventricular orifice, so as to hold the portions of the tricuspid valve far apart. The

cut surfaces of the tumour indicate that it is formed from a coagulum of blood. It is composed of a compact, but not hard, substance, which, when recent, presented various shades of colour, crimson, pink, and pale brown, like those of coagula of blood more or less decolorized. A thin exterior layer, of the same substance as the rest, but paler, is distinctly laminated. The part of the tumour which is attached to, and appears imbedded in, the wall of the auricle, is very pale and soft; the wall of the auricle is thin, and on its external surface, at the part corresponding to that on which the tumour inside is fixed, there is a circumscribed roughness, as if some adhesions had been broken down. The rest of the heart is healthy.

1529. The heart of a sheep, greatly enlarged by the growth of fat on its exterior and in its cavities. The muscular walls of the auricles and ventricles are very thin. The cavity of the right ventricle is nearly filled by a lobulated mass of suet-like fat, which has distended its walls, and has pressed back the tricuspid valve, so as nearly to close the orifice into the auricle. The lining membrane of the ventricle, and the pulmonary artery, are healthy. The cavity of the left auricle is encroached upon by a large mass of fat projecting into its interior, and the lower half of the left ventricle is occupied by a tumour of the same kind as that in the right ventricle. The valves and the aorta are healthy.

The heart weighed two pounds three ounces: the weight of the fat added to it is therefore about twenty-five ounces. The sheep from which it was taken was very inactive, and had dyspnœa on exertion. There was a great accumulation of fat around the kidneys. The left pleura and the pericardium each contained half a pint of fluid.

From the Museum of George Langstaff, Esq.

- 1529A. Section of the left ventricle of a heart, in which, near its apex, a small oval mass of pale, firm, medullary substance is imbedded. The adjacent muscular tissue appears unaltered.

The patient, a man forty-two years old, had medullary tumours in the arm, ilium, lungs, and bronchial glands. His case is recorded by Mr. Stanley in the "Medico-Chirurgical Transactions," vol. xxviii., p. 317, London, 1845.

Presented by Edward Stanley, Esq.

1530. The half of a heart, through every part of which melanotic matter is deposited in small black spots. The tissue adjacent to the deposits is not discernibly altered.

The other portion of this heart, similarly diseased, is in the Museum of St. Bartholomew's Hospital. It was taken from a man aged fifty-seven, in whom the melanotic disease first appeared in the form of a tumour, between the umbilicus and pubes, where there had been a nævus. The tumour is preserved in No. 288; and the history of the case, which is recorded by Dr. Norris in the "Transactions of the Provincial Medical and Surgical Association," vol. iv., p. 437, 1836, may be found in Vol. I., p. 131.

Presented by Dr. Norris.

1531. The heart of a lady who died with alveolar cancer of the stomach. Its surface is in every part beset with small circular growths of a soft, yellowish, flocculent substance. Some of these are concealed by a layer of soft false membrane, by which the heart was covered, but most of them are exposed by its removal, and appear to grow only from the surface of the heart. In many places the growths are isolated; in some, especially on the auricles, they are so thickly crowded together that they form a continuous layer about a quarter of an inch thick. The muscular substance of the heart is thin, pale, and flaccid.

The stomach is preserved in No. 1175.

From the Museum of George Langstaff, Esq.

1532. Portion of the left ventricle of the heart of an ox, in the substance of which is a round tumour, of uncertain nature, nearly an inch in diameter, of soft consistence, and enclosed in a distinct cavity.

Presented by Sir William Blizard.

1533. Portion of the right ventricle of a heart, in which a mass of firm substance, mixed with white earthy matter, is imbedded on the surface of the muscular tissue. It is of a flattened oval form, about three-fourths of an inch in one, and half an inch in the other, diameter, and loosely connected with the adjacent tissues. The opposed surfaces of the pericardium

contiguous to it were adherent; but portions of them are removed so as to expose its exterior.

" Of the Appearances upon opening the Body of Mr. Coxwell, Apothecary.

" The cartilages of the ribs were changed for bone, and the cartilage of the first rib, on the right side, was not only changed for bone, but there was a luxuriant protuberance shot out from its inner surface, which made a dent in the lungs opposite to it. The pericardium adhered to the heart everywhere. On the anterior surface of the heart these adhesions were the firmest, and just opposite to the right ventricle there was a bony substance formed in the pericardium, about the size of a sixpence. On the lower and posterior surface the adhesions were not so strong, and it seemed to be by a bloody coagulable lymph, which could be separated both from the heart and pericardium.

" The substance of the heart itself was tender, not flabby and tough, as we sometimes find it. The valves of the aorta were ossified, and the inner coat of the aorta itself was not sound. No particular disease in any other part. He had been early and much afflicted with the gout, often attacking his feet, and he often removed it immediately by putting his feet into cold water. I do not know if he had any visible reason to suppose that there was any translation of the gouty action to the heart. He was of an anxious mind, had obscurely spent a fortune, lost the principal part of his business, was in distress, and was rather scheming how to live with two children. How far his circumstances might have become a cause of the disease, or how far it might have increased it when begun, I will not at present say."—*Hunterian MS., Cases and Dissections*, No. 34.

Before the preceding description, Mr. Hunter placed in his manuscripts, a copy of a case as related by the patient himself, Mr. Holder, a surgeon: of which case he says, " The following case was so similar to that of Mr. Coxwell, that he considered it as a description of his own; it is therefore given here as a substitute for that of Mr. Coxwell." The same case, with fuller details, and with the title, " The Case of Mr. Holder, by Mr. Richard Brown Cheston," is published in the " *Medical Observations and Enquiries*," vol. vi., p. 31. 8vo. London, 1784.

6. *Entozoa in the Heart.*

1534. Portion of the left ventricle of a bullock's heart, with a nearly globular cyst, two inches in diameter, imbedded in it. The walls of the cyst are a line in thickness, pale, dense, and compact. Externally, it is intimately attached to the substance of the heart; internally, it is smooth, with some patches of white earthy matter on it. It contains portions of brownish

shrivelled membrane, like those of acephalocyst hydatids, collapsed, and half-dried, and other portions of membrane like those of well formed hydatids. *Hunterian.*

1535. Part of a bullock's heart, in which a large cyst, with walls partly bone-like, is attached to the apex of the cavity of the left ventricle. The cyst contains thin layers of opaque white membrane, like hydatid-membranes, and is probably a cyst which contracted, and had earthy matter deposited in its walls, after the rupture of acephalocyst hydatids. *Hunterian.*

1536. Portion of the ventricle of a pig's heart, in which, imbedded among its fibres, there are numerous oval cysts containing Entozoa of the species "Cysticercus Cellulosæ" of Rudolphi. *Hunterian.*

SERIES XXXIV.—Sub-Series C. DISEASES OF THE VALVES OF THE HEART.

1. *Superficial Deposits of Lymph: Vegetations.*

1537. Portion of the base of a heart, with large coarsely granulated masses of brownish-yellow lymph firmly adherent to the mitral, and one of the aortic, valves. The mass on the mitral valve extends down the tendinous cords to one of the fleshy columns; that on the aortic valve has a somewhat conical form, and is half an inch in length; its apex projecting quite across the orifice of the aorta. *Hunterian.*

1538. Portion of the left ventricle of a heart, with the aortic and mitral valves. On the ventricular surfaces of all the valves, and on the tendinous cords, are numerous firmly adherent portions of lymph, of a brownish-yellow colour. *From the Museum of George Langstaff, Esq.*

1539. A heart, exhibiting dilatation of the left auricle, with opaque white

thickening of its lining membrane, and masses of lymph deposited on the auricular surface of the mitral valve, and on its tendinous cords.

Presented by Sir Anthony Carlisle.

1540. Aortic valves, very much thickened, and with their free borders recurved. On one of them there is a large irregular mass of firmly adhering brownish lymph, like that in the preceding specimens, but containing earthy matter. Smaller masses of a similar kind are scattered on the ventricular surfaces of both the other valves.

Presented by William Norris, Esq.

2. *Thickening, Opacity, Adhesion, Contraction, and other similar Diseases of the Endocardium, and Valves of the Heart.*

1541. Part of the left side of a heart, with the arch of the aorta. Both the mitral and aortic valves are slightly thickened, and in a considerable extent opaque-white. The mitral valve also exhibits small deposits of earthy substance in its thickened texture. The aorta is rather dilated; and just beyond the origins of the great brachio-cephalic trunks there are a few plates of earthy matter in its internal coat.

Hunterian.

1542. A heart, in which both the auriculo-ventricular orifices are contracted by thickening and induration of the tricuspid and mitral valves, and by shortening of their tendinous cords. All the parts thus diseased are opaque-white, hard, and tough. The pulmonary valves are healthy; the aortic are slightly thickened and opaque. Both the auricles are exceedingly dilated, and their walls are hypertrophied; the ventricles also are dilated, but to a less extent; the walls of the right ventricle are thinner than is natural; those of the left have about their usual thickness. The aorta appears small in comparison with the pulmonary artery and the heart.

The patient was a woman thirty-three years old, and had signs of disease of the heart and liver for five years. She had extreme dyspnoea, with blueness of the lips

and face; the heart's action was bounding, could be felt over a wide extent, and was generally irregular. She had jaundice, which was followed by ascites, for which it was necessary to tap her twice. At the last she had hæmoptysis, and died suddenly.

The lungs were found infiltrated, and compressed by large quantities of fluid in the chest. The pericardium contained two pints of fluid. The liver was very large, soft, and granulated.

From the Museum of George Langstaff, Esq.

1543. Portion of the left side of a heart, with the mitral and aortic valves.

The free borders of the mitral valve are round, thick, opaque, and rigid: and the orifice between the auricle and ventricle is contracted into the form of a narrow crescent. The rest of these valves is thickened, but less than the borders are. The tendinous cords are thickened, shortened, rigid, and opaque. The same opaque thickening and induration extends from the mitral valve over that part of the lining membrane of the ventricle, which is between it and the aortic valves. These valves have opaque spots, and there is a ring of fatty and earthy matter in the coats of the aorta, at the level of the upper margins of the valves. *Hunterian.*

1544. Mitral and aortic valves, with the adjacent parts. The mitral valves are thickened and opaque, and their borders, more thickened than any other part, appear rigid. The tendinous cords and the summits of the fleshy columns are similarly thickened, opaque, tough, and white; the aortic valves are shrivelled, and their margins are curved backwards and irregularly thickened.

“ Heart Diseased: Mr. Bulstrode's Case.

“ When a boy he never could use the same exercise that the other boys did: he could not run up stairs without being out of breath. He had almost throughout his life an irregular pulse. Upon the least increase of exercise he had a palpitation at his heart, which was often so strong as to be heard by those who were near him, and he became soon fatigued, which was by his acquaintance supposed to be owing to the want of spirit or courage. With all this he grew to be a wellformed and properly sized man, but he still retained his complaints.

“ He of late years [about the age of thirty] took to violent exercise, such as hunting; and often in the chase he would be taken so ill with palpitations, and almost a total suffocation, that he was obliged to stop his horse and be held upon the saddle. Some of these fits continued several days before he recovered his usual strength: at

such times he became black in the face. Sometimes an universal yellowness took place; and often he could not lie down in his bed, but was obliged to sit up for breath.

" All these symptoms gradually increased upon him, and at times, without any violent exercise, he would feel as if dying, and used to express himself so: but as the cause of these feelings did not appear to his friends, they rather treated him slightly. At last anxiety of mind only would bring on these feelings, palpitations and suffocations in some degree.

" In the winter of 1780 and 1781, he hunted very severely, and also caught a cold; both of which brought on the above-mentioned complaints with greater violence than ever. He consulted Dr. Heberden and Sir George Baker: the palpitation, the difficulty of breathing, the great oppression, with the blackness in the face (I suppose) they thought either arose from spasm, or was nervous, for they ordered cordials, such as spirit of lavender, wine, &c. I was sent for on the same day to give a name to the disease. Upon inquiry into all the symptoms of the disease, my opinion was that there was something very wrong about the heart, namely, about the source of the circulation, that the blood did not flow freely through the lungs. That a stagnation to the blood in any one part about the heart would produce in some degree suffocation, which was the cause of the darkness of the face at those times. That the means to be practised were rest, bleed gently, eat moderately, keep the body open, and the mind easy; and as he had got the better of the former attacks (although not so violent) I saw no absolute reason why he should not get the better of the present.

" Eight ounces of blood were taken away from him that day, which relieved him. The symptoms still continuing, although not so violent, I saw him once more. He lost about four or five ounces more, which also relieved him, but still he did not get materially better, and at last, as an addition to the above, he became yellow, and his legs began to swell with water, and all his symptoms gradually increased.

" He was now attended by Sir Richard Jebb; he was blistered on the legs, which threatened a mortification there: a caustic was applied to the pit of the stomach (I suppose for a pain there.) What medicines he took I don't know. Nature was at last worn out, and he died. I solicited to open the body, and was allowed.

" On opening the belly, there was a very small quantity of bloody yellowish serum. Every viscus appeared to be sound. The gall-bladder was pretty full of bile, which was thick, but not ropy, as if the thinner parts had been strained off. The ducts were clear both to and from the bladder.

" Upon opening the chest the lungs did not collapse, being a good deal œdematous; otherwise appearing sound. A little bloody serum in both sides of the chest. The heart was very large, and very full of blood. Upon opening the right side of the heart I found nothing uncommon either in the heart or [pulmonary] arteries. Upon opening the left side I found the valves of the aorta shrivelled up, thicker, and harder in consistence than common.

" This diseased structure of the valves accounts for every one of what may be called his original symptoms, and was such as rendered them of very little use: therefore the blood must have flowed back into the cavity of the ventricle again at every systole of the artery. Whether this shrivelled appearance of the valves of the aorta was a

natural formation, or a disease, is not easily ascertained; but if it was disease it must have begun early in life, from his symptoms having begun early. It may be difficult to account for the increased size of the heart, whether it could be mechanical, as the blood would be thrown back at every systole of the aorta and diastole of the heart? or whether it arose from a particular affection of that viscus? The first idea is the most natural, although it is not absolutely necessary that the cause should be mechanical for such an effect to take place, because we see every day enlarged hearts, where the symptoms have been somewhat similar, and yet no visible mechanical cause existed. It is easily to be conceived, first, that the circulation could not be carried on so regularly and perfectly as common; secondly, that a stoppage to the motion of the blood in either arteries or veins, but much more that of retrograde motion of the blood any where, must produce a stagnation, and which will be according to the quantity of blood passing that way; thirdly, that if it was only in a branch of an artery or vein, the stagnation would probably be only partial; but when in an artery or veins of the whole body, as the aorta or venæ cavæ, then it must be pretty universal; and as the retrograde motion in the blood began with the aorta, we can easily trace the effects of this retrograde motion, which effects would only be a stagnation of the blood beyond the left ventricle, first in the left auricle, then the pulmonary veins, then the pulmonary arteries, next the right auricle, and in all the veins of the body; producing that darkness in the face, &c., which stagnation will extend to the arteries of the lungs, to the right side of the heart, then through the whole veins of the body."—*Hunterian MS. Cases and Dissections*, No. 39.

The above case was published, with some slight additions and improvements, by Mr. Hunter in his "Treatise on the Blood," &c. (Works, vol. iii., p. 80). The first part is also contained in the *Hunterian MS. Cases in Surgery*, p. 326; and the latter portion, with the examination after death, in the *MS. Dissections of Morbid Bodies*, No. 184.

1545. Portion of a left ventricle, and of an aorta, with its valves. The valves are uniformly thickened, opaque, and somewhat corrugated. On two of them a narrow, smooth, and thin prominent ridge, apparently formed by their thickened substance, extends across their ventricular surface, just below their free borders. The lining membrane of the ventricle is thickened and opaque. *Hunterian.*

The specimen is represented in "Baillie's Morbid Anatomy." Fas. i., pl. 2. f. 1.

1546. Parts of a left ventricle and aorta, with the aortic valves. The valves are all much thickened, diminished by uniform contraction to nearly half their natural width, recurved at their thickened borders, and adherent

to each other at their adjacent angles. Earthy matter is also deposited in them, and in the adjacent thickened and opaque portion of the endocardium.

The patient, a man thirty-one years old, had cough, dyspnoea, palpitation of the heart, and irregularity of the pulse, for nearly a year. Shortly before his death he had hæmoptysis.

Extensive effusion of blood was found in one of the lobes of the left lung, and copious serous effusions in the pleuræ and pericardium. The walls of the left ventricle were very thin, its texture soft, its cavity large. The mitral valve was healthy.

From the Museum of George Langstaff, Esq.

The specimen is represented in Mr. Hodgson's "Engravings intended to illustrate some of the Diseases of the Arteries." Pl. 1, fig. 6. London, 4to. 1815.

1547. The valves of an aorta, slightly and irregularly thickened and opaque, and containing small masses of earthy matter. Two of them are united along their adjacent half-edges, and two have small wart-like masses of yellowish lymph attached near their free borders.

Hunterian.

1548. The valves of an aorta, almost uniformly thickened and opaque, and with some patches of calcareous matter deposited beneath their arterial surfaces. Only one of them is completely formed, and this is large enough to close nearly half the orifice of the artery; the other two constitute but one imperfect valve. This malformation of the valves was in all probability congenital.

"We dissected a man who had been remarkably strong, but was now very much emaciated. All his abdominal viscera were sound. His brain sound, except some small stony concretions on the upper part of the pineal gland. The heart and lungs were sound. On examining the valves of the aorta, I found that there had been two only instead of three, and that one of them had a kind of frænum or cross-bar attaching its middle to the side of the artery. These valves were very much diseased, and had become thick and strong, by which means they did not meet entirely, or by even edges. The left kidney had two pelves, and two ureters, which entered the bladder by two orifices."—*Hunterian MS. Dissections of Morbid Bodies*, No. 85, p. 126.

The specimen is represented in "Baillie's Morbid Anatomy." Fas. i., pl. 2. fig. 5.

1549. A portion of aorta, with its valves, which are a little thickened and

opaque. Two of them are so united by their adjacent edges that they present a continuous curved margin, like that of one valve. Their united edges form a prominent ridge, passing from the middle of their free border to the wall of the artery; and along this ridge a large quantity of calcareous matter is deposited in coarsely accumulated granules. It is very like the *cross-bar* mentioned in the previous description by Mr. Hunter; and probably, like it, indicates a congenital union of the valves.

Hunterian.

3. *Earthy Deposits in Thickened Valves.*

1550. A portion of the left side of a heart. In the substance of the mitral valve there is a large mass of earthy matter, with a rough uneven surface. The rest of the valve, and the tendinous cords, are thick, opaque, and nearly rigid.

Hunterian.

1551. The commencement of an aorta, with its valves, dried, and exhibiting numerous small granular deposits of earthy matter in the substance of the valves, together with opaque spots in them and in the adjacent endocardium.

From the Museum of Sir A. P. Cooper.

1552. Portion of a heart, with the mitral and aortic valves. Earthy matter is deposited in coarsely granular masses and bars, which project upon the ventricular surface of the mitral, and the arterial surface of the aortic, valves. The largest mass forms a thick ridge extending across the mitral valve. All the rest of the texture of the valves, and the adjacent part of the endocardium, are thick and hard.

Hunterian.

1553. The mitral and aortic valves of a heart, thickened, rigid, opaque, and containing large masses of earthy matter. All the aortic valves are adherent to one another near their angles of attachment, and the orifice between the left ventricle and the aorta is contracted to a circle of about

four lines in diameter, and this not in the centre, but near the wall of the artery. The earthy matter forms hard granular projections on the surface of the valves, and is in some parts exposed by the destruction of the lining membrane over it. *Hunterian.*

1554. The valves of an aorta, thickened, opaque, and rendered almost completely inflexible by the deposit of a large quantity of earthy matter projecting in irregular masses upon their surfaces. Either there were congenitally only two valves, or, which is less probable, the adjacent edges of two of the valves are united, from their angles of attachment to the corpora Arantii, so smoothly that no trace of their proper borders remains, except in a bar of earthy matter crossing their aortic surface. The orifice of communication between the aorta and the ventricle is reduced to a very narrow fissure. *Hunterian.*

The specimen is represented in "Baillie's Morbid Anatomy." Fas. i., pl. 2, fig. 3.

1555. The valves of an aorta, rendered completely rigid and immoveable by the deposit of large granular masses of earthy matter. There are, by congenital defect, only two valves, and the aperture between them, though they are raised, is a narrow chink, less than an inch in length, and between one and two lines in width.

1556. Two aortic valves, dried, and exhibiting very large granular deposits of earthy matter, both in their texture and in that of the adjacent part of the left ventricle. Those portions of the valves in which there is no earthy deposit are nearly transparent, thin, and apparently healthy.

From the Museum of Sir A. P. Cooper.

1557. Part of an aorta, with its valves, which appear to have been, congenitally, only two in number. As in No. 1555, both valves are rigidly fixed in the raised position, with only two narrow chinks between them near their angles. Both valves are thickened and opaque, and rough masses and bands of hard earthy matter are deposited in them.

The history of the case is published by Mr. Crisp, in his "Treatise on the Blood-vessels," p. 87. London, 1847.

"H. P., aged forty-five, of fair complexion, and rather low stature, but very muscular, by trade a gardener, of temperate habits, became ill about ten years since, but not so much as to prevent his working, except occasionally, when he complained of shortness of breath: he never had œdema of the extremities, nor any other dropsical symptom. He suffered occasionally from slight cough; and, about a month before his death, his breathing became extremely oppressed, his pulse small, and intermitting; the heart's impulse was very much increased, and at times strong; the sound, on percussion, dull over the whole of the left side; a loud bellows-sound and *frémissement cataire* were generally present. While stooping to take up something from the ground he fell forward, and died instantly."

Presented by Edwards Crisp, Esq.

4. *Ulceration of the Valves of the Heart.*

1558. A heart, of which both ventricles, but especially the left, are greatly dilated. Their walls are thickened, but not in a degree proportionate to the increase in the size of the cavities. The mitral, tricuspid, and pulmonary valves are healthy. The aortic valves are four in number, but a large part of the supernumerary valve has been removed. They are all thickened, opaque, and slightly contracted; and have shreddy fibrinous growths attached about the centres of their ventricular surfaces. Two of them, also, are deeply ulcerated; one presenting a small aperture surrounded by deposits of lymph in its centre, the other having lost a large portion of its free border. The aorta appears very small in proportion to the cavity of the left ventricle, but its texture is healthy.

From the Museum of George Langstaff, Esq.

1559. Part of a heart, including the left ventricle and the mitral, pulmonary, and aortic valves. The ventricle is dilated, and its walls are in about a proportionate degree hypertrophied, but their texture appears pale and flabby. The mitral and pulmonary valves are healthy. The aortic valves are thickened and opaque: long fibrinous growths are attached

around the corpora Arantii; and in the centres of two of the valves there are circular ulcerated apertures, the margins of which are irregular, and thickly covered with lymph.

From a man seventy-four years old, who had dyspnœa and palpitation of the heart for many years. These symptoms increased greatly during the last six months of his life. The pulse was always irregular and strong, his lips were livid, the dyspnœa was frequently aggravated, and he presented many of the signs of angina pectoris. Towards the close of life his legs became œdematous. His death was sudden.

Ten ounces of fluid were found in the pericardium, four pints in the left pleura, and two and a half in the right. The lungs were emphysematous. The coronary arteries were healthy. The liver was granulated.

From the Museum of George Langstaff, Esq.

1560. Portion of an aorta, with its valves. The aorta is dilated above and behind the valves, and there are a few small deposits of earthy matter beneath the surface of its lining membrane. The valves are very wide, thin, and, for the most part, transparent. Two of them are perforated by large ulcers of a nearly circular form, whose edges are thickened with adherent lymph. The ulceration extends behind one of the valves to the adjacent part of the artery.

The specimen was probably taken from a patient whose case is added to the description of No. 1768.

Presented by Sir Everard Home.

1561. Part of a left ventricle, with the aortic valves. Two of the valves appear healthy, except in that their free margins are slightly thickened: the third valve is thickened and irregular, and one of its angles, together with the adjacent part of its border, is separated, as if by tearing, from its attachment at the orifice of the artery. The surface of this valve is spotted with adherent lymph: and a fibrinous coagulum, two inches long, is attached to it.

The patient, a woman twenty-eight years old, died suddenly while sitting in her bed, six weeks after delivery. She had disease of the knee-joint, but appeared in good general health till the day before her death, when she expressed some fear that she

should "lose her milk," and the nurse thought her breathing was quicker than natural.

A further account of the case is given by Mr. Crisp in his "Treatise on the . . . Blood-vessels," p. 88. London, 1847.

Presented by Edwards Crisp, Esq.

1562. A heart, of which both the ventricles, but especially the left, are dilated and hypertrophied. The tricuspid, mitral, and pulmonary valves are nearly healthy. The aortic valves are thickened, opaque, and rigid; large masses of granular earthy matter are deposited in them, and a large portion of the free margin of the posterior valve appears to have been removed by ulceration.

From a man forty-five years old, who had signs of disease of the heart for many months, and died with a great accumulation of fluid in the pericardium and pleuræ.

From the Museum of George Langstaff, Esq.

1563. Part of an aorta, with its valves, one of which is reduced to an eighth of an inch in depth by the removal (by ulceration?) of all its free border. The remains of the valve are thin, and nearly transparent; its edge also is smooth. The other valves are extremely thin, and the walls of the aorta are rather more than usually dilated behind them.

5. Diseases of the Blood-vessels of the Heart.

1564. A heart, dried, and exhibiting the coronary arteries extensively ossified. In other respects it appears to have been healthy.

From a patient who had angina pectoris.

From the Museum of Sir A. P. Cooper.

Specimens of Diseases of the Heart in other parts of the Museum:—

Nos. 78, 90, 91, 332, 333, 1647, 1649, 1650, 1654, 3454-5-6.

SERIES XXXV.—INJURIES AND DISEASES OF ARTERIES.*

1. *Ruptures, Wounds, and other Injuries by External Violence.*

1565. A portion of the aorta of a man who fell from a considerable height in such a manner that his spine was violently bent backwards. In the inner and middle coats of the aorta, at its posterior part, there are two narrow transverse cracks, measuring together about three-quarters of an inch in length. Directly over these there is a small aperture in the external coat. There are numerous deposits of fatty matter in the middle and inner coats.

The patient, a man aged fifty-four, was brought dead into the London Hospital, having fallen from a topmast. In the examination of the body about two quarts of blood were found in the abdominal cavity. The third lumbar vertebra was fractured across its body, and the transverse processes of the vertebræ next above and below it were also broken.

Presented by John Quekett, Esq.

1566. Part of a thoracic aorta, ruptured transversely through all its coats, and round nearly five-sixths of its circumference. The injury was the consequence of a heavy fall upon the back. The tissues of the artery appear to have been healthy.

The patient, a man forty-six years old, was admitted into the London Hospital April 20th, 1840. He was supposed to have lived ten minutes after a waggon passed over his body.

* In the following descriptions the coats of the arteries are distinguished by the names *external*, *middle*, and *internal*. The external coat is the layer of fibro-cellular tissue, the "*membrana cellulosa propria*" of Haller, which invests each artery and unites it with its sheath, or the surrounding tissues. Under the name of the middle coat are included both the elastic and muscular coats, as described by Mr. Hunter. The internal coat includes all that lies within the muscular coat, namely, the longitudinally fibrous and the striated coats of Henle, and the epithelium.

In the examination, the first cut through the right pleura was made evident by a sudden gush of blood, of which above two quarts were contained in this side of the chest. On turning up the right lung, the pleura forming the right lateral boundary of the posterior mediastinum was much discoloured, and ruptured at one part. The aorta opposite the ninth dorsal vertebra was almost wholly divided, the continuity being only preserved by a piece about one-fourth of an inch broad. The blood had made its way into the abdomen, through the aortic opening in the diaphragm, and much of it was found partially coagulated near the spleen. The ninth dorsal vertebra was fractured through its body, and the transverse processes of the vertebræ above and below it were also fractured.

Presented by John Quekett, Esq.

1567. The iliac arteries of a man, twenty-seven years old, who fell from a height of six or eight feet upon a sharp iron stake. It penetrated the inner side of the left thigh, entered the pelvis, traversed the peritoneal cavity on the left side of the rectum, and pierced the left common iliac artery in the angle of its bifurcation. Copious hemorrhage took place into the abdominal cavity; the blood which flowed externally had the characters of venous more than of arterial blood.

Presented by John Quekett, Esq.

1568. Part of a femoral artery, which was transversely divided, and from which fatal hemorrhage occurred. The divided ends of the vessel are not more than a line apart, and are wide open; the cavity of one portion of the artery has been exposed, as if to show the unaltered state of all the coats.

Hunterian.

1569. Parts of a femoral artery and vein, from a patient who died of secondary hemorrhage after amputation; and probably soon after it, for the vessels present no contraction or other change of condition.

Hunterian.

1570. The lower part of a brachial artery, with a small "false aneurism," which formed after a wound made in an attempt at venesection. The artery is laid open from behind, and exhibits a small oblique opening in its anterior wall. The inner and middle coats of the artery are everted towards this opening, and over it, a firm circumscribed globular clot,

or thrombus, about half an inch in diameter, is closely adherent to it. The artery is healthy in its texture.

The patient was a woman fifty years old who received some severe injuries of the head and chest, from which she died after three days. Directly after the artery was wounded a bandage and compress were applied, but not properly. Twenty-four hours after, the limb was methodically bandaged. On dissection the vein was found entire: there was a small aperture in the fascia of the arm through which a minute portion of the coagulum protruded. The coats of the artery were deep red for some distance above and below the puncture.

From the Museum of Robert Liston, Esq.

1571. Part of a popliteal artery, from which, in consequence of rupture of a small portion of its coats, blood escaped into the surrounding cellular tissue. A sac, with walls about a line in thickness, composed of the surrounding tissues, laminated and condensed, formed round the coagulated blood; but it is now emptied, the coagulated blood being turned downwards. A portion of whalebone is passed through the aperture in the artery into the cavity of the sac.

There can be little doubt of the following being the case of the patient from whom this preparation was taken:—

“ John Staples, aged thirty-three, by trade a lamp-lighter, about the latter end of March, by a board giving way under him, his right leg slipped down as low as his ham between two other boards, but he did not feel any inconvenience from the accident, nor even a discolouration of the skin.

“ About a fortnight after he perceived a small swelling in his ham, accompanied with a strong pulsation: the swelling increased, with considerable pain, for some weeks, the two last of which he was in great misery. June 4th, rather more than two months after the accident, he came into the hospital. The whole leg was now much swelled, very painful, and there was a confused pulsation; but there was so much tension in the part, that the disease could not be well ascertained. He had common bread and milk poultice applied until June 30th, when amputation was performed.

“ Upon the examination of the parts after their removal, it plainly turned out to be a rupture of the artery, but whose orifice was extremely small: it allowed at once the blood to escape into the cellular membrane opposite to this opening, which we may suppose dilated a cell or cells, and at the same time squeezed one cell against another, forming an artificial coat, which dilated from the force of the blood to the size we found it, and in the end had the common effects produced in it that take place in an aneurism, when its coats, both natural and acquired, give way, viz., the blood becoming diffused into the general cellular membrane of the surrounding parts.

" On cutting into the tumour, and scooping out the coagulated blood, then introducing a probe into the sound artery above, it readily passed through a small lateral opening, with rounded or smooth edges, into the cavity of the tumour. On tracing the artery downwards from this opening, I found it passing along the tumour on that side next to the bone, but obliterated nearly the whole diameter of the tumour, and become so soft and pulpy as not to be distinguishable from the other parts which were composed of coagulated blood, cellular membrane, artery, &c. In tracing the artery from below, I also lost it in this mass. The crural artery, as it approached this lateral orifice, for about two inches in length, became contorted or serpentine in its course, similar to what sometimes takes place in an aneurism.

" Here was a case where there was every external appearance of an aneurism, such as a circumscribed swelling, with a pulsation.

" This was what would be called, or understood, by a spurious aneurism ; but it was properly a rupture of the coats of the artery, and which, I do imagine, is only to be distinguished from the [true] aneurism, or dilatation, by the time it takes in coming to its ultimate size ; viz., from its first appearance to its threatening destruction to the parts beyond, as a limb, or destruction in the surrounding parts in which it is placed, threatening mortification and bursting. An aneurism being as many months in coming to this ultimate as this disease was days ; for in aneurism, although the artery gives way at last, and then its coats are principally composed of the condensed cellular membrane, as in this case, yet it is strong, owing to the time it has had to thicken and form a coat while the artery was dilating."—*Hunterian MSS., Cases and Observations*, No. 44.

2. *Ruptures of Arteries by Force from within.*

1572. The arch of an aorta, generally, but irregularly and in a slight degree, dilated. It has been ruptured, probably by the force of the left ventricle, about an inch above the valves. The coats at the situation of the rupture are not more dilated than elsewhere ; they are torn obliquely, and partially separated by the blood effused, for some distance around the rupture, between the outer and middle coats. There is no remarkable appearance of disease in the texture of the arterial coats at any part ; the inner coat is wrinkled and seamed, and there are a few fatty deposits beneath its surface.

Hunterian.

1572A. The arch of an aorta, with its principal branches, and part of the heart.

"Just below where the innominata is given off, the inner and middle coats are ruptured for half the circle of the aorta, on the great curvature, as clean as if cut with a knife, and in a straight line around. The blood effused through the rupture separated the outer from the fibrous [middle] coat, down to the origin of the aorta, along the fore part, and around the great curvature to the back part, dissecting thereby two-thirds of the artery." . . . "The dissecting process has also been continued for an inch beyond the left subclavian on the descending aorta, and effused blood was contained in the cavity formed between the coats." . . .

In the "arteria innominata is another rent of all the coats, which runs transversely across the anterior half of it, and from which the hemorrhage took place which killed the patient." . . . "The descending portion of the aorta and the roots of the great vessels are covered with atheromatous patches, some few having bony scales. The coats were all easily separable by the fingers from each other, and softer and more readily broken than natural. Similar atheromatous patches are seen in the coronary arteries. The walls of the left ventricle are one inch thick; the mitral valves are thickened and indurated;" and the aortic valves and the lining membrane of the heart below them are thickened and ossified.

The patient, an old woman, was supposed to be asthmatic. On making an exertion, in getting up in bed, she fell back, and expired almost immediately.

The case, from which the preceding quotations are taken, is detailed in Mr. Guthrie's work "On the Diseases and Injuries of Arteries," p. 43. London, 8vo., 1830.

Presented by G. J. Guthrie, Esq.

3. *Healing of Wounds and similar Injuries of Arteries.*

1573. Part of the femoral artery of a boar.

The following passage in Mr. Parkinson's MS. Notes of Mr. Hunter's Lectures, 1786, p. 6, probably refers to this preparation. "The crural artery of a boar, being

divided, the bleeding ceased before the animal seemed weak, and upon examination this effect appeared to have been produced by a quantity of firm coagulated blood, which had not only outwardly closed the orifice [in the integuments?] but within had regularly and conically contracted the diameter of the canal ;" *i. e.* blood had collected in the tissue around the artery, and there coagulating, had, by its pressure upon the exterior of the vessel, put a stop to the hemorrhage. There is no coagulum within the artery.

Hunterian.

1574. Part of the carotid artery of an ass, divided in the middle of its course. The animal bled to death. The divided ends of the artery are separated more than half an inch: they are contracted, and contain small coagula of blood. The parts around them appear to have been compressed by the effusion of blood. A portion of coagulum remains in the wound leading down to the artery.

Hunterian.

1575. Part of a popliteal artery, which was lacerated in a compound fracture of the lower part of a femur, caused by a car falling on the knee. The lacerated extremity is abruptly contracted, and nearly closed. The coats of the artery appear healthy.

All the soft parts about the artery were extensively lacerated, and the joint was laid open. At first the orifice of the artery was found quite closed. The end of it contained no coagulum, but blood was effused in the tissue round it. The popliteal vein and nerves were not lacerated.

From the Museum of John Howship, Esq.

1576. The end of the umbilical artery of a calf, soon after its separation from the placenta. Its extremity has been irregularly divided. The distal portion of the canal is filled with coagulated blood, so as to be completely impervious. Above the coagulum, the calibre of the artery is considerably diminished, but its canal is open.

Hunterian.

1577. Longitudinal sections of the umbilical artery of a calf, removed after the process of natural obliteration was completed. The distal half-inch of its canal is completely closed with a dense white tissue, like that of a cicatrix, in which osseous matter has been formed. This part also is larger

than the rest of the trunk, which appears, therefore, to have a bulbous extremity. In the axis of the rest of the trunk, the remains of the cavity of the artery form a canal a quarter of a line in diameter, with irregularly wrinkled walls. The coats of this part of the artery are a line in thickness, tough and hard, like the tissue of a cicatrix.

Hunterian.

4. *Direct and remote effects of the application of Ligatures upon Arteries.*

1578. Two portions of healthy artery, laid open to exhibit the division of the middle and inner coats by ligatures applied after amputation of a limb. The line of division is straight; the margins of the divided coats are nearly level, and are slightly incurved.

Presented by Sir William Blizard.

1579. Part of the femoral artery of a man who had a popliteal aneurism. The artery is enlarged, and its inner coat is very deeply wrinkled transversely. A quill is passed beneath it in the line through which a ligature was carried; the inner coats are at this part imperfectly divided, but the canal of the artery is not less here than elsewhere.

Presented by Sir Everard Home.

1580. Part of the carotid artery of a dog, on which, probably some days before death, two ligatures were applied, at the distance of about an inch from each other. The portion of the artery between the ligatures is contracted to about half its former calibre, and at the upper part is nearly filled with a conical clot, one-third of an inch long, which is closely adherent to the walls of the artery, just below the upper ligature. The ligatures were not yet separated when the dog was killed.

Hunterian.

1581. Portions of an artery and vein, containing coagula. The coagulum in the artery has an elongated conical shape, as if formed above a ligature,

but does not adhere to the walls. That in the vein completely fills the cavity, and is closely adherent to the walls. *Hunterian.*

1582. A femoral artery and vein. A ligature composed of six stout silk cords has been tied upon the artery, near its middle part. Immediately above the ligature, the contracted canal of the artery is filled with a soft, grumous, and adherent clot of blood; its coats are deeply blood-stained. The coats of the vein are similarly stained; they are contracted at the part near the ligature; below that part a thin patch of lymph is adherent to their inner surface, and above it there is a large coagulum of blood, apparently recently formed. *Presented by Sir Everard Home.*

1583. Parts of a femoral artery and vein, from a stump. The extreme end of the artery is closed, and just above it, is a small pale conical clot of blood, decolorized, a part of which is intimately adherent to the side of the vessel. The vein is healthy to its extremity, which is thickened and contracted. *From the Museum of Sir A. P. Cooper.*

1584. Parts of a femoral artery and vein, from a stump. The extremity of the artery is completely closed, and the tissues around it are condensed. A bristle is passed beneath a band of apparently newly organized substance (the organized conical clot?), which extends from the interior of the closed extremity of the artery to an adjacent part of its inner wall. Coarse injection was impelled into the vessels before the examination, and is only partially removed. *Hunterian.*

- 1584A. The lower part of an aorta, the iliac arteries and veins, the vena cava inferior, and a large medullary tumour, from a lady, in whom the right common iliac artery was tied a year before death. The ligature, enclosing the portion of the artery included within it when it separated, is suspended at the side of the specimen: it was applied five-eighths of an inch below the bifurcation of the aorta, and three-eighths of an inch above the division of the common iliac. The portion of the common iliac artery above the former seat of the ligature is gradually contracted, and, at its end, com-

pletely closed by a thin layer of firm tissue, with which its thickened and indurated coats have coalesced. Similar firm tissue connects this end with that of the lower portion of the artery, which is similarly but more abruptly closed: and both ends are closely united with the indurated surrounding tissues. The distance between the ends of the artery is not greater than that which was occupied by the ligature: they appear not to have retracted at all after its separation. The upper portion of the artery, near its closed end, contains a very small, dry, pale clot.

The patient was a middle-aged lady. The tumour, which filled a great part of the iliac region, was supposed to be an aneurism of the gluteal artery. A complete account of the case is given in a lecture, by Mr. Guthrie, in the "London Medical and Surgical Journal," vol. vi., p. 101. August 23, 1834.

Presented by G. J. Guthrie, Esq.

1585. The external and internal iliac, with portions of the superficial and deep femoral arteries, together with adjacent parts, from a man in whom the external iliac artery was tied for inguinal aneurism, twelve years before death, by Sir E. Home. The internal iliac and the superficial and deep femoral arteries are pervious, rather above their ordinary size, and apparently healthy in their texture. But the trunk of the external iliac and femoral, from the origin of the former to the division of the latter, is obliterated and converted into a solid cord, which is closely connected with the surrounding parts, and affords no indication of the part of it to which the ligature was applied, or of that on which the aneurism was situated. The external iliac vein and anterior crural nerve are healthy.

From the Museum of John Howship, Esq.

5. *Failure of the process for the closure of an Artery after the application of a Ligature.*

1586. "Femoral artery, operated upon for popliteal aneurism."—[*Hunterian MS. Catalogue.*] Its coats are thickened and rigid; the internal coat, especially, is thick and rough upon its surface, and appears soft. The

ligature was probably applied to the middle of that part of the artery which is now laid open, and at which there is an appearance of parts of the coats having been cut through. There is a conical clot of blood both above and below this part; above it, also, there is an aperture in the wall of the artery, but it is not clear how this was formed.

The popliteal artery of the patient's other limb is preserved in No. 1601.

Hunterian.

1587. Part of a femoral artery, which was tied at St. George's Hospital for the cure of a popliteal aneurism. No obliteration or contraction of the artery has taken place. A small coagulum of blood, adherent to the lower end of the preserved portion, had probably formed above the ligature. The coats of the artery, except at the lower end, to which the coagulum is attached, and which appears ulcerated, are healthy. The adjacent vein is filled with coagulum.

Hunterian.

1588. A femoral artery, with the adjacent parts, from a man whose leg was amputated at St. George's Hospital. Some days after the amputation hemorrhage from this artery occurred. A ligature was placed around that part of the granulations of the stump from which the hemorrhage appeared to proceed, but the artery was not inclosed by it. The ligature is shown in the preparation tied close by the end of the sciatic nerve. The patient died after a few subsequent smaller bleedings, and the end of the artery was found, as now shown, retracted an inch beneath the surface of the stump, and slightly contracted. For half an inch above the open extremity of the artery its interior is rough, as if thickened and superficially ulcerated; and, above this, an imperfect conical clot of blood is closely attached to its walls. All the rest of the artery appears healthy.

Hunterian.

1589. Parts of the abdominal aorta and ureter of a dog. A ligature was tied round the aorta; ulceration took place beneath and adjacent to it, and extended into the ureter, opening a free communication between it

and the aorta. The coats of the artery divided by the ligature have separated widely from each other.

Presented by Joseph Swan, Esq.

1590. The end of a femoral artery, from a stump.

The following account of the case is in the Hunterian MSS. :—

“ A boy at St. George’s Hospital, about twelve years of age, had a white-swelling in his knee. He was becoming hectic. It was removed. He soon lost his appetite : no rest, sweats, &c.

“ The stump often bled considerably, but when opened, it could not be perceived from whence it came. He became lower and lower, and at last died. On examining the part, I found the granulations ossified. I found that the artery had not adhered above the ligature, but had mortified above three-eighths of an inch, which was sloughing off. This artery must have been taken up pretty high to have been of any service.”—*Hunterian MS., Cases in Surgery*, p. 81.

6. *Restoration of the Circulation after Obliteration of an Artery.*

1591. The head, neck, and part of the chest of a rabbit, whose carotid arteries were both tied at the same time. Their trunks are obliterated for about half an inch at the part on which the ligature was applied : but above and below the obliterated parts they have their usual diameter. The circulation in the head and face appears to have been maintained through the vertebral and deep cervical arteries. The lingual, facial, and auricular arteries, and the branches of the vertebral arteries within the skull, appear to be of their usual size.

The effect of the simultaneous ligature of the two arteries was slight. Respiration was quickened for a few minutes, and the rabbit remained dull and disinclined to eat during the day after the operation ; but on the following day it had recovered.

An account of this and the following experiments is in a paper by Sir A. P. Cooper, “ On Tying the Carotid and Vertebral Arteries,” &c., in the “ Guy’s Hospital Reports,” vol. i., p. 457. London, 1836.

From the Museum of Sir A. P. Cooper.

1592. The head, neck, and part of the chest of a rabbit, whose vertebral arteries

were both tied at the same time, about a quarter of an inch from their origins. The whole length of the trunks appears to have been obliterated after the operation. The carotids are enlarged, but no anastomosing vessels are shown by which the circulation was maintained.

The usual effects of this operation were that it made the respiration slow and laborious. The fore-legs were weakened, and a much more severe effect was produced upon the animal than when the carotid arteries were obstructed.—*See the observations of Sir A. P. Cooper, l. c., p. 464.*

From the Museum of Sir A. P. Cooper.

1593. The head, neck, and part of the chest of a rabbit, in which the right vertebral and carotid arteries were tied near their origins, eighteen days before it was killed. The trunks of both the vessels are closed in their whole length. The vertebral and carotid arteries of the left side are dilated and elongated; no anastomosing vessels are shown.

After the operation, which was performed at the same time on both the arteries, the breathing became laborious, and the fore-leg was partially paralysed. At the expiration of eighteen days the recovery was complete, except that the respiration was difficult when the animal was excited.—*Sir A. P. Cooper, l. c., p. 467.*

From the Museum of Sir A. P. Cooper.

1594. The head, neck, and part of the chest of a dog, in which both the vertebral and carotid arteries were tied at the same time, nine months before death.

The results of the operation, and the appearances shown in the preparation, are thus recorded by Sir A. P. Cooper in the paper already referred to:—

“ On the 28th of January, 1831, I tied the right and left vertebral, and the right and left carotid, arteries of a dog, and all was completed within half an hour. The animal appeared insensible, or as if it were intoxicated; it had difficulty in breathing; its pupils were dilated; its volition was diminished; and it ran against the leg of the table, or any other body, without seeing or regarding it. When placed upon its legs it fell down on its right side, and had spasmodic twitchings of its hinder extremities.

“ At the expiration of a quarter of an hour, it was still insensible; it had shiverings, although placed near the fire: it rested its head upon the ground on the right side: its respiration was still laborious, and its pupils were dilated.

“ After an hour and a half, however, it was able to stand, and, although with difficulty, to stagger around a small room.

" On the 29th, it was dull, and indisposed to move. On the 30th, it was much the same, and not inclined to move or eat. On the 31st, it walked round the room; and ate about an ounce of food, but would not lap. On the 1st of February, it was much better; it ate and drank, and from that time gradually recovered. It afterwards became a good house-dog; and I kept it for nine months, when it was killed, that I might inject it. The number and the size of the anastomoses were very extraordinary.

" The description of them is as follows:—The carotid artery on the right side was obliterated opposite the fifth and sixth cervical vertebræ: below the obliteration it is injected from the aorta; above the obliterated part it is filled with injection, (1) from the inferior thyroideal artery, communicating with the superior thyroideal by large branches; (2) by a large descending cervical branch, dividing into numerous large anastomoses; and (3) by branches from the vertebral artery anastomosing with the external carotid artery on the first vertebra of the neck.

" The left carotid was obliterated from near its origin, but filled with injection above the obliterated part, by the inferior thyroideal artery communicating with the superior, and by the ascending cervical artery from the subclavian, by numerous and large anastomoses, and by an œsophageal artery from one of the intercostals communicating with the superior thyroideal artery.

" The right vertebral artery was obliterated near its origin on the seventh cervical vertebra, but filled with injection above the obliterated part by two branches from the superior intercostal arteries, which passed, on the back of the spine, into the arterial canal of the vertebræ, at the fourth, fifth, and sixth intercostal spaces. The vertebral artery thus produced passed to the second vertebra of the neck, where it formed the basillary artery, and, in its course, had festoons or loops formed in it, as far as the first vertebra, at each intervertebral substance; and here, upon the transverse process of the first cervical vertebra, it formed communications with the carotid.

" The left vertebral artery was obliterated close to its origin; but was filled with injection by an anastomosing branch from the superior intercostal artery, which entered between the fifth and sixth vertebræ of the neck; and by a second branch, also, from the intercostal artery passing on the posterior surface of the transverse processes of the fourth and fifth cervical vertebræ: then, over each transverse process was a loop of arterial communication, forming down each side a beautiful display of festoons.

" The basillary artery began at the base of the second cervical vertebra; passed to the junction of the first vertebra to the head, where it again received vessels from the vertebral arteries; and then proceeded, as a single artery, to the points of the petrous portions of the temporal bones; where it formed the commencement of the circle of Willis, which was well filled with injection, and sent off its usual arteries to the brain.

" The vertebral artery also joined the internal carotid artery on the transverse process of the second cervical vertebra of the neck."—*Guy's Hospital Reports*, vol. i., p. 458. London, 1836.

1595. A similar preparation, of which Sir A. P. Cooper recorded the following account:—

" On a second occasion I tied the left vertebral artery of a dog. I then secured the right vertebral; and after an interval of eight days I put a ligature on each carotid artery.

" The animal was weakened in its fore-legs; but in other respects it suffered less than the former, and on the following days it took its food as usual.

" The right carotid was obliterated; the injection passed from the aorta to the obstructed part, and above it, by an anastomosing vessel from the vertebral, and by an ascending cervical artery from the right subclavian.

" The left carotid was obliterated, but filled with injection to the place of obliteration, from the aorta; and above, it was filled by an ascending cervical, an inferior laryngeal branch, and others from the vertebral.

" The right vertebral artery was obliterated opposite the seventh cervical vertebra, before it entered the foramen of the sixth vertebra; but above the obliteration it was filled by an anastomosis with the superior intercostal artery: it then ascended through the canal in the sixth cervical vertebra, forming beautiful festoons and junctions with arteries passing over the vertebræ, opposite each intervertebral substance, and joining, by anastomosis, with the carotid at the first vertebra of the neck.

" The left vertebral artery was obliterated at the seventh vertebra; but the artery formed anastomoses, one with the subclavian, and two with the superior intercostal.

" The artery on this side formed similar but larger junctions than the right, opposite to each intervertebral substance, in festoons or loops; and thus the vertebral artery was reproduced and filled with injection from these vessels.

" The two vertebral united to form the basillary artery as usual, and joined with the internal carotids at the circle of Willis.

" Where the basillary artery was first formed, anastomoses were sent to the carotid arteries on the transverse process of the first cervical vertebra.

" The result of tying the carotid and vertebral arteries in the dog is such as I have described; but in the rabbit it is different, as in this animal the arrest of blood in these four vessels is immediately fatal."—L. c., p. 462.

1596. The pelvis, lower part of the aorta, left iliac arteries, and adjacent parts, from a woman in whom the left internal iliac artery was tied ten years before her death.

The case, the first in which the internal iliac artery was tied, is published in two papers in the "Medico-Chirurgical Transactions." The first in the 5th volume (London, 1814), entitled "A Case of Aneurism of the Gluteal Artery, cured by tying the internal Iliac, by W. Stevens, Esq., M.R.C.S.L, and Surgeon in the Island of Santa Cruz." The second paper is in the 16th volume (London, 1830), with the title, "An Account of the Dissection of the Parts concerned in the Aneurism, for which Dr. Stevens tied the Internal Iliac Artery;" by Mr. Richard Owen. From this second paper the following is extracted:—

“ Maila, a negro woman, imported into the West Indies in the year 1790, had, in 1812, a tumour on the left hip, over the sciatic notch, nearly as large as a child's head, and pulsating very strongly. It had commenced about nine months before, and the woman submitted to the operation proposed by Dr. Stevens on the 27th of December, 1812.

“ An incision, about five inches in length, was made on the left side, in the lower and lateral part of the abdomen, parallel with the epigastric artery, and nearly half an inch on the outer side of it; the peritoneum was separated from its loose connection with the iliacus internus and psoas magnus; it was then turned inwards to the division of the common iliac artery. The internal iliac being found, and compressed betwixt the thumb and finger, the tumour ceased to pulsate, and began to disappear; a ligature was passed round the vessel, by means of a probe, and it was tied about half an inch from its origin. The tumour disappeared almost immediately after the operation, and the wound healed kindly. About the end of the third week the ligature came away, and in six weeks the woman was perfectly well. The operation was neither very difficult nor very tedious; the woman did not complain of much pain, nor did she lose an ounce of blood. There was no difficulty in avoiding the ureter; when the peritoneum was turned inwards, the ureter followed it.

“ The woman, after continuing to enjoy a good state of health for ten years, died of an affection of the chest in the year 1822. Dr. Stevens being apprised of this circumstance, examined the parts within the pelvis, in the presence of Dr. Kerr and other medical gentlemen of the Island of Santa Cruz, and by injection ascertained that the internal iliac artery had become impervious at the part where the ligature had been applied; and he also found that the ischiatic artery was continued in the character of a ligamentous chord to the place of its exit from the pelvis; but that the glutæal artery was pervious at its origin.

“ With this proof of the successful result and due effect of his operation, and having detected the vessel that was the true seat of the aneurism (which until now had been supposed to be of the glutæal artery), the pelvis was removed, with a view to a future and further examination.

“ Accordingly, soon after his arrival in this country, Dr. Stevens, at the suggestion of Mr. Lawrence, deposited the preparation in the Museum of the Royal College of Surgeons, and the dissection being entrusted to me [Professor Owen,] he requested me to communicate the particulars to the society in whose memoirs the case originally appeared.

“ As a preparatory step, I threw in some fine injection by the arteria profunda, in order to facilitate the tracing of anastomosing channels; it ran out very freely by the opening which had been made in the origin of the glutæal.

“ Within the pelvis, the external and internal iliac arteries were given off in the usual manner. An incision being made into the left common iliac, and continued down to the part where the internal iliac became contracted, it was found there to have become completely obliterated. The ilio-lumbar artery appears to have arisen just above the part where the ligature had been applied, and the obliteration, in consequence, has not extended to the origin of the external iliac.

" In the state of a ligamentous chord, the internal iliac descended towards the ischiatic notch for the space of an inch, and then suddenly resuming its natural diameter, it again became pervious, and so continued for the extent of half an inch; the glutæal artery arising from the lower part of this space, a sacro-lateral vessel from about the middle, and the obturator artery from the upper part of it. The latter vessel was, however, entirely obliterated; but the sacro-lateral artery was pervious, of the size of a crow-quill, and passed inwards to the second sacral foramen; whilst the glutæal artery, of its natural size, received, close to its origin, two vessels as large as the preceding, given off from the sacro-lateral artery near the third and fourth sacral foramina of the left side.

" The anastomoses of the sacro-lateral arteries with each other and the sacro-median were large and tortuous. Immediately after the origin of the glutæal artery, the ischiatic, obliterated and chord-like, passed on to the lower part of the ischiatic notch; the sanatory processes set on foot by the application of the ligature being uninterrupted by the enfeebled current of blood passing from small canals to a large one.

" Many vessels met with in the course of the dissection of the glutæus maximus and medius were found to have received the injection last thrown in, and were preserved. The glutæal artery was in a healthy condition, and of the natural size; but an elongated tumour, situated between the tuberosity of the ischium, and the great trochanter, indicated the true seat of the original disease. This tumour, in length three inches and a half, and about two-thirds of an inch in breadth, was of the sciatic artery,* and consisted of layers of condensed cellular membrane, and the peculiar fibrous arterial coat.

" It contained a quantity of dark-coloured, granular, not lamellated coagulum, which, when removed, showed the internal surface of the sac to be somewhat irregular, and raised in small patches by the deposition of soft matter. In some places it appeared to retain the smooth character of the arterial lining membrane. From the ischiatic notch to the tumour, the artery was completely obliterated, its texture altered, and the remains of its cavity filled with indurated and partly calcareous matter. From the lower part of the tumour the sciatic artery was continued down the posterior part of the thigh of an uncommon size, nearly as large as the femoral artery in front; its calibre did not, however, correspond with the apparent magnitude, for its coats were thicker, by at least one half, than any artery of the same size with itself. It was obliterated for about the space of an inch below the sac, and became pervious after receiving an anastomosing vessel from the arteria profunda.

" A vessel ramifying between the glutæus maximus and medius, and distributing branches to these muscles, was connected to the commencement of the sac, from which it had probably arisen: it did not, however, open into the sac; but, after becoming contracted near the point of attachment, it there gave off a small artery to the quadratus femoris, and received its blood by anastomosing near the crista ilii with a

* The branch which seems to continue the course of the artery, and accompanies the ischiatic nerve.

superficial branch of the glutæal artery. A smaller vessel was similarly attached to the lower part of the aneurismal sac, but neither did it communicate with that cavity; for the blood which it received from branches ramifying in the neighbourhood was diverted from the sac by a small branch given off at the point of attachment.

7. *Thickening of the Internal Coat of the Arteries, with Deposits of Atheromatous or Fatty Matter, and of Earthy Matter, or Ossification.*

THE deposits of fatty and earthy matter in the walls of arteries, or, as these morbid states are commonly called, the atheromatous disease and the ossification of arteries, may affect the internal coat, while it appears to be, in other respects, healthy. But, usually, and perhaps always when the disease proceeds to a great extent, and to the formation of earthy matter, the seat of the morbid substance is, primarily, in the internal coat thickened and made rigid and opaque-white by previous disease. In nearly all the following specimens the thickening (or, as some have called it, the cartilaginous state) of the internal coat of the artery coexists with the deposits of fatty and earthy matter. Many of them, also, show several other changes which are usually the consequences of these states, such as, fatty deposits in the middle coat, thickening and induration of the outer coat, the loss of elasticity and dilatation of the affected portion of the arterial tube, &c. But, as they do not show clearly the process by which these several changes are produced and combined, the following history of it, so far as it is illustrated by the specimens, is inserted from the account given by Rokitansky,* as a general preface to the descriptions.

The disease commences with the deposit, from the blood in the canal of the diseased artery, of a fibrinous substance, which forms a layer, or patches, of various thickness on the free surface of the internal coat of a part of an artery, or of a wide extent of the arterial system. At first succulent, clear, greyish or opaline, and easily separable in layers, this deposit, as it becomes organized, grows dense, drier, elastic, and adherent; it now resembles fibro-cartilage, but consists, really, of tissues analogous to those which form the natural internal coat of the arteries,—the epithelium, fenestrated membrane, and longitudinally fibrous membrane of Henle.

The fatty, or atheromatous, disease consists in a transformation of the

* "Handbuch der Pathologischen Anatomie," B. ii., p. 534. Wien, 1844. 8vo.

deposit into a grumous substance, containing oil-drops, crystals of cholestearin, and molecular matter, probably, of an albuminous nature. The change usually makes progress from the deeper towards the superficial or inner layers of the deposit, till it affects, in irregular spots, the whole thickness of the "hypertrophied internal coat;" and, now, the grumous matter, exposed to the current of blood in the artery, may be partially washed away, and an appearance produced like ulcers of the arterial walls.

The ossification of the arterial walls, as it is often called, consists in the deposit of dense and hard plates, rings, or masses of earthy matter, composed principally of phosphate and carbonate of lime, without organic form, in the thickened internal coat; like the fatty degeneration, with which it commonly coexists, it makes progress from the deeper to the superficial layer.

While these changes are occurring in the internal coat of the artery, the other coats may remain healthy, especially if the disease of the internal coat be slight. But, more commonly, they also become diseased. The middle coat, apparently in consequence of fatty degeneration, becomes of loose texture, brittle and soft, easily split into layers and fibres; and, losing its elasticity, yields to the pressure of the blood, and is dilated. Its fibres, in the dilatation, becoming softer and more and more disparted, it is at length nearly lost sight of, or appears invaded by the accumulating fatty or earthy matter in the internal coat. The outer coat usually exhibits the effects of chronic inflammation,—being reddened, infiltrated, and swollen, or thickened, consolidated, and indurated.

Aneurismal and other dilatations of the arteries may be reckoned among the consequences of the thickening of the internal coat, and the consecutive affections of the middle and external coats; for these affections, whether combined or not with fatty or earthy degeneration of the thickened internal coat, always impair the elasticity of the other coats, and make them, in the extent to which they are affected, susceptible of dilatation by the ordinary pressure of the blood.

Moreover, among the various causes of morbid obliterations of arteries, it is probable that none is so frequent as this same disease of the internal coat,—especially when it exists, in much intensity, at or near the orifice of an artery.

1597. A small portion of an iliac artery, of which the inner coat, being reflected, is shown thicker and harder than is natural, dense, and opaque-white. The thickening is nearly uniform, but in some situations the opacity is greater than elsewhere, so that the reflected coat looks mottled with various shades

of opacity. There is a patch of fatty or atheromatous deposit in the thickened coat, more than half an inch in diameter, and surrounded with many others of smaller size. At its centre this deposit is a line in thickness; at its circumference it gradually becomes thinner, till it is lost sight of; the inner surface of the thickened coat is raised by it, and made uneven. The middle coat of the artery appears healthy, but is slightly impressed at the part corresponding with the fatty deposit.

Hunterian.

1598. A similar specimen, from the same patient. A small thin plate of earthy matter is inlaid near the internal surface of the fatty deposit in the thickened inner coat. The external coat of the artery appears somewhat indurated.

Hunterian.

1599. A similar specimen. The external coat is reflected, and its thickening and induration are more plainly shown.

Hunterian.

1600. Portions of an artery, probably the femoral, from the same patient. On their internal surface they appear speckled with minute punctiform deposits of earthy matter, which are arranged in transverse lines, corresponding with the transverse or circular wrinkles of the inner coat.

Hunterian.

The following is the history of the patient from whom the four preceding preparations were taken:—

“ Lieut.-General Desaguliers was only ill for a few days: had something like an ague, but when those fits attacked him he felt distressed in a great degree, and said he should die, but recovered again. The last fit, in which he died, the distress was increased; besides which he felt a violent pain in his two buttocks. So distressing was the pain, that he begged they would cut the two pieces out, and in this state he died.

“ Upon opening the belly, immediately appeared a considerable quantity of extravasated blood, lying loose among the bowels, which was in part coagulated, and which, when collected, measured full two pints and a half.

“ The spleen was found to be a mere pulp, with its coat separated from its substance, between which was a good deal of blood; but the coat was burst, so that the blood which was found in the cavity of the belly had come from the spleen, and had escaped by this opening. Every other viscus within the belly was to appearance sound, and no other appearance of ruptured vessels anywhere.

"The contents of the chest were to appearance perfectly sound, only about half a pint of bloody serum was found in its cavity.

"The whole vascular system was almost free from blood. The cavities of the heart could only be said to be bloody. Neither the pulmonary artery nor aorta had any blood in them: the large veins were free from it, not the least coagulum in any of them, although the blood in the abdomen had a good deal of coagulum in it."—*Hunterian MS., Cases and Dissections, No. 73. Part of the case is also recorded in the "Cases in Surgery," p. 166; and another part in the "Dissections of Morbid Bodies," No. 175.*

1601. A portion of the popliteal artery of a man in whom the superficial femoral artery of the opposite limb was tied for the cure of a popliteal aneurism (the tied artery is preserved in No. 1586). This artery shows the morbid changes which most commonly precede the formation of aneurism. In a portion of it, about two inches long, and both above and below which it appears completely healthy, the internal coat is thickened irregularly and in patches; it is thus rendered from half a line to a line in thickness, opaque-white, and tough; its inner surface is superficially tuberculated, coarsely wrinkled, and, in parts, like the surface of a contracted and wrinkled cicatrix. In two small patches of the internal coat thus diseased, there are yellow-ochre-coloured deposits of fatty matter beneath the surface. The upper and lower boundaries of the diseased part of the artery are distinctly marked, by the contrast between its pure white and the pale yellowish tinge of the adjacent healthy artery, as well as by a raised border formed by the thickening of the inner coat. The middle coat of the diseased portion of the artery appears healthy, except in that it is a little thicker than elsewhere, and its connection with the internal coat seems loosened. The external coat, in an extent exactly corresponding with that of the disease of the internal coat, is thickened, indurated, consolidated, and confused, as if by adhesive inflammation, with the tissue around it.*

Hunterian.

* Nos. 1703 and 1705 in this Series are aneurisms of the two popliteal arteries of another patient. Parts of these popliteal arteries are symmetrically diseased in exactly the same manner as the artery described above; and it is very probable that the other popliteal artery of this patient, before the formation of the aneurism, was diseased in the same manner as the one above described.

1602. Part of the arch of an aorta. Its inner coat has been reflected, and is thickened, dense, rigid, white, and nearly opaque. It is variously spotted and mottled with fatty deposits in its substance, in which, also, near the origins of the great vessels, plates of earthy matter lie imbedded. The layer of the thickened inner coat, which is internal to these plates, is irregularly cracked; they appear, also, to have imbedded themselves in, and produced some disease of, the inner layers of the middle coat.

Hunterian.

1603. A similar smaller specimen, the dissection of which appears to have displayed the fatty and earthy substances deposited as abundantly in the inner layers of the middle coat, as in the internal coat, of the artery. But at the margin of the section through the coats of the artery, an opaque-white line may be seen internal to the brownish-yellow layer which is formed by the middle coat. It is, therefore, not improbable that the morbid deposit, which appears to be situated in the inner layers of the middle coat, is really situated in those outer layers of the inner coat which, while the rest were reflected, retained their connection with the middle coat.

Hunterian.

1604. A similar specimen, in which, as in the preceding, the thickened internal coat appears to be incompletely reflected.

Hunterian.

1605. Section of the first part of the arch of an aorta, showing, on its cut edge, the extent to which a deposit of the morbid substances already described extends; namely, that it occupies the whole thickness of that part of the thickened and opaque internal coat in which it is seated, increasing its apparent thickness, and raising its internal surface, so as to make it look tuberculated; while the middle coat, though impressed by the morbid deposits accumulated in the inner coat, is not itself the seat of any of the like kind.

Hunterian.

1606. Another section of the same artery, exhibiting the same appearances.

Hunterian.

1607. Parts of an iliac and femoral artery, of which the coats are dissected, and show a large quantity of fatty and earthy matter deposited in the substance, and especially in the deeper part, of the thickened internal coat. Parts of this coat, where the morbid deposits are most abundant, are nearly a line in thickness. The middle and external coats appear healthy: they may be clearly traced at the cut margins of the upper specimen.

From the Museum of Sir A. P. Cooper.

1608. "Part of an aorta, where ossification is coming on. It was steeped in an acid, but without any effervescence, so that this white appearance takes place before earth is deposited."—(*Hunterian MS. Catalogue*). By the "white appearance" Mr. Hunter probably meant the opaque-white thickening of the internal coat at the seats of the chief deposits of fatty matter.

1609. The arch of an aorta, with part of the descending aorta, in which there are numerous deposits of fatty and earthy matter. The coats have been dissected in two places, but the situation of the morbid deposit is not in these parts well shown: at the cut margins of the specimen it appears to be in the internal coat alone. The specimen serves better to display the morbid state of the free surface of the inner coat commonly connected with this disease. The surface of this coat (which is in many places more than a line in thickness) is elevated in small patches by the deposits beneath it, so that it is wrinkled, and superficially tuberculated: in the depressions between these elevations it is more minutely wrinkled and seamed, like the surface of an uneven cicatrix. In colour the surface is, in a few small patches, opaque-white; in some parts it is glistening, bluish or greyish white; but the greater part presents various shades of buff, ochre-yellow, and brownish colours, derived from the morbid deposits immediately beneath it. *Hunterian.*

1610. Part of an abdominal aorta, with very abundant deposits of fatty and earthy matter. The internal surface of the artery is elevated in scattered patches by the morbid deposit, so that it has a superficially tuberculated

appearance. It is also various in colour, being spotted with shades of ochre-yellow and brown, by the deposits immediately beneath it, and in some places (where the chief deposits are) opaque-white, or glistening, like the surface of a cicatrix. At the lower part, where the morbid deposits are most abundant, there are cracks on the internal surface of the artery, exposing wide but shallow spaces in its coats containing more or less of the morbid substances. The situation of these deposits is shown at the cut edges of the artery, and at the lower part of it, where its coats are partially dissected from one another. At the upper part the deposits are exclusively in the thickened internal coat, especially in its deeper layers; the middle and outer coats are distinct, external to the deposits, and appear nearly healthy in both thickness and texture. The line of boundary between them and the deposit is marked by the pale, opaque, ochre-yellow colour of the one, and the deeper brownish and more nearly glistening hue of the section of the other. At the lower part of the artery the deposit is more abundant; and here, some of it appears to extend into the substance of the middle coat; but the principal change which this coat has undergone is, that where the deposits are thickest, it is thinned, as if by their pressure, and is reduced to a nearly transparent layer. *Hunterian.*

1611. An exactly similar specimen, from a thoracic aorta. In some places it shows how the fatty deposit commences, in the form of groups of minute yellow points, or dots, so thickly set as to give the appearance of a uniform yellowish spot. *Hunterian.*

1612. A similar specimen. In addition to most of the appearances described in No. 1610, this shows the further progress and consequences of the cracking or tearing of the thickened internal coat over the chief collections of the morbid deposit. As in the preceding specimen, this tearing has taken place at the lower part of the abdominal aorta, where the morbid deposit, consisting chiefly of fatty matter, is accumulated in the greatest quantity, and occupies the greatest part of the thickness of the internal coat. Over several patches of such accumulated deposit the remaining internal layer of the internal coat appears to have been torn, and then to have been

removed, as if by ulceration. Thus there are exposed shallow cavities in the arterial coats, oval in shape, but with irregular outlines, like the cavities of ulcers, except that there is no appearance of vessels or blood in or near them. These cavities open into the canal of the artery by wide orifices, whose margins are formed of the remains of the thickened internal coat, irregularly destroyed, and overhanging their bases. They contain some remains of the fatty deposits attached in a thin layer of yellowish granular-looking matter to their bases; but much of this material must have been discharged from them into the blood. *Hunterian.*

1613. The lower part of an abdominal aorta, with the two common iliac arteries, extensively diseased, in the same manner as the three specimens last described. In this, however, the opaque-white thickening of the internal coat is better shown than in them, and the deposit of earthy matter is more abundant, in the form of thin, oval, and round, concave, bone-like plates of yellowish colour, variously shaded, and smooth and shining on their internal surfaces. *Hunterian.*

1614. The lower part of an abdominal aorta, with the common iliac arteries. Fatty and earthy matters are so abundantly deposited in the thickened internal coat, that, through nearly the whole extent of the arteries, there is a space between the remains of the internal coat and of the thinned and wasted middle coat; which space appears to be filled with soft and grumous fatty matter. In some places, also, as at the orifice of the left iliac, and through nearly the whole length of the right iliac artery, the accumulation of the morbid deposit has so elevated the inner surface of the vessels that their calibre is reduced one half. *Hunterian.*

1615. A similar specimen, except that the disease has made less progress than in either of the three preceding. In this are shown, at the lower end, as usual, the most diseased, part of the abdominal aorta, several plates of earthy matter, like those last described, which extend to the very surface of the thickened internal coat. Thus the central parts of their surfaces

lie exposed, or covered only with an exceedingly thin and transparent pellicle, on the inner surface of the artery; and they look like macerated and dried scales of bone, spotted and shaded with yellow. The edges of most of them are still imbedded in the thickened internal coat, near its surface; and they are so curved that they do not interfere with the roundness of the artery; but the edge of one of them has torn through the adjacent lining of the artery, and projects into its canal, as many of the similar plates in the specimen last described do. *Hunterian.*

1616. Parts of the arch of an aorta, and of one of the carotid arteries, showing many of the successive stages of the disease illustrated in the preceding specimens. In many places, particularly at and near the origins of the great brachio-cephalic trunks, small spots or patches of the internal coat of the artery are thickened, elevated, and opaque-white; so that the internal surface of the artery looks as if thin pieces of coagulated albumen had been laid upon it. The intensity of the opaque whiteness thus produced is various, being proportionate to the degree of thickening of the internal coat. Around the orifices of the innominate and the left carotid, there are rings of opacity, which, like the patches, are gradually lost sight of in the adjacent parts of the arteries: on some parts of the aorta the opacity is in delicate undulating white lines, directed in the course of the flow of blood; in other parts the opacity is diffuse and uniform. Most of these patches of opacity exist alone, without either fatty or earthy matter; but at the origins of the left vertebral and subclavian arteries, and in the concave part of the arch opposite to them, there are circular, concave, thin plates of earthy matter, like bone-scales, imbedded with fatty matter in the thickened internal coat. Some of these lie deep, and are obscurely seen through the opaque tissue; some lie superficially, so that they appear quite exposed; one has broken through the membrane over it, and its edge projects in the canal. At the bifurcation of the carotid artery such deposits are abundant; and many points of earthy matter project into the canal of the artery. *Hunterian.*

1617. The arch and thoracic portion of an aorta, dilated, and having a very

abundant deposit of earthy matter in their coats. They have been dried, and the exact seat of the morbid deposit cannot be discerned; but it occupied the internal layers of the walls of the artery, and in many places projected into its canal. The deposit has, in every part, the form of plates varying from extreme thinness to the thickness of a line; they, for the most part, affect a circular or oval outline, but their borders are irregular and jagged; they are from a line to an inch in diameter, but some of the larger appear made up of several smaller plates, which have coalesced, but preserve traces of their original outlines. By such coalescing of numerous plates of the deposit, the greater part of the right and upper wall of the first portion of the arch looks like an uniform and continuous layer of bone. All the plates are curved in adaptation to the round form of the artery: their outer convex surfaces are uneven, rough, and coarsely granular, with many prominences: their internal concave surfaces are, for the most part, smooth, though not polished. But, in many places, smaller plates of earthy matter appear to have been laid on the inner surface of the larger plates, making this surface as rough as the outer; and on the right wall of the arch of the aorta, the inner surface of the morbid deposit is covered with a very uneven layer of earthy matter, as if coarse granules had been heaped, one over the other, on the originally smooth plates.

From an old man who died with dropsy.

From the Museum of Robert Liston, Esq.

1618. A similar specimen, with still more extensive deposits of earthy matter. At the upper part of the thoracic aorta, the deposit is so accumulated that the walls of the vessel (which are here also dilated) appear composed of a continuous tube of bone, perfectly rigid, unyielding, and brittle, but with a nearly smooth and uniform internal surface.

From the Museum of Sir A. P. Cooper.

1619. Part of an abdominal aorta, with the iliac, splenic, and some other arteries (probably parts of those of a lower extremity), dried. There are numerous deposits of earthy matter in the walls of them all. Those in

the aorta and common iliac arteries are in the form of scattered plates, like those last described; but in the splenic and the other smaller arteries they are like portions of narrow rings encircling the vessel. Such rings are arranged with various degrees of closeness; in some parts they are distinct, and placed at nearly regular intervals; but in others they are confused, and form a continuous layer transversely marked.

Hunterian.

1620. Thin plates of compact earthy matter from the walls of an artery.

Hunterian.

1620A. Portion of an aorta, dried, and exhibiting, together with earthy deposits, particles of an oily or fatty-looking substance in its coats.

Presented by Edwards Crisp, Esq.

7a. *Illustrations of the Thickening of the Internal Coat, with formation of fatty and earthy matter, in particular Arteries.*

1621. Section of the left ventricle of a heart, and part of the aorta, exhibiting several small deposits of fatty and earthy matter about the attachments of the aortic valves. The earthy matter is immediately beneath the surface of the internal coat. The chief deposits lie in transverse lines extending between the angles of the several valves, at the level of their free margins.

Hunterian.

1622. A similar specimen; the morbid deposits occupy the same positions.

Hunterian.

1623. The arch of an aorta, in the walls of which there are numerous deposits of fatty and earthy matter. They are especially abundant at the angles, and at the level of the free margins, of the valves, and in the concavity of the arch, about the attachment of the ductus arteriosus and where the left

bronchus passes under it. They lie immediately beneath the internal surface of the artery, and the membrane over them is in some places cracked, so as to expose their edges. The aortic valves are thickened and opaque. *Hunterian.*

1624. The arch of an aorta, with the trunks of the coronary arteries. There is an abundant deposit of fatty and earthy matter through the whole extent of the thickened internal coat of the aorta. All the coats appear thickened, and in some degree dilated, and the inner coat is uneven, tuberculated, and in many places cracked, over plates of earthy deposit. The aortic valves are slightly thickened. There are abundant deposits of earthy matter in the trunks of the coronary arteries, rendering them completely rigid. *Hunterian.*

1625. The arch of an aorta, inverted and dried, exhibiting numerous close-set plates of earthy matter deposited in the first portion of it. The edges of most of them project from the walls of the artery into its canal; but this state may have been produced in the preparation of the specimen.

1626. The arch of an aorta, from an old woman, dilated and converted into an almost uniformly rigid bone-like tube, by the deposit of plates of earthy matter, laid together like pavement. The preparation is dried; and the small extent of the coats which remain free from the morbid deposit is shown by the few parts that are transparent.

From the Museum of John Howship, Esq.

1627. Portion of a thoracic aorta, exhibiting several opaque whitish deposits beneath its internal surface, near and between the orifices of the intercostal arteries.

The preparation is figured in Mr. Crisp's work on the Blood-vessels, pl. iii., fig. 4.

Presented by Edwards Crisp, Esq.

1628. An abdominal aorta, with the common iliac arteries, dried. They present through their whole length numerous thick, oval, and quadrilateral plates of earthy substance in their coats. There is one very large plate at the beginning of the aorta: similar plates are very numerous and close-set through the whole length of the thoracic aorta; few and small in the abdominal aorta about the origins of the cœliac and mesenteric arteries; but again numerous and large near the lower part of the aorta, and in the trunks of the common iliac arteries.

From the Museum of Robert Liston, Esq.

1629. Part of the arch and descending portion of an aorta, with numerous thick irregular plates of earthy matter imbedded in its coats. They are nearly equally abundant in all parts, as far as the lower part of the abdominal aorta; there, they are larger and more numerous than in any other part.

From the Museum of Sir A. P. Cooper.

1630. The lower part and bifurcation of an aorta, dried, and exhibiting extensive and thick deposits of earthy matter in its coats.

From the Museum of Sir A. P. Cooper.

1631. The lowest portion of an abdominal aorta, with the common iliac arteries, dried. They exhibit large deposits, in the form of plates, of earthy matter in their coats.

From the Museum of John Howship, Esq.

1632. Part of one of the external iliac arteries, from the same patient, with similar earthy deposits arranged in narrow rings.

From a woman seventy-seven years old, who died with gangrena senilis. A year before her death she had an ulcer on her leg, which healed in a few months. Then the foot and lower part of the leg inflamed, and three months before her death her toes mortified.

From the Museum of John Howship, Esq.

1633. Part of a femoral artery, the internal coat of which is remarkably corrugated, and has small particles of earthy matter deposited in it.

Hunterian:

8. *Dilatation of Arteries; Aneurisms, and Aneurismal Dilatations.*

THE preceding division of this Series illustrates that disease of the arterial coats which is the usual precursor of their morbid dilatation, namely, the opaque-white thickening of the internal coat, with the consecutive affection of the middle and external coats [See, especially, No. 1601]. The dilatation may be regarded as, immediately, the consequence of the impairment of that elasticity and resiliency by which, in the healthy state, the arteries dilated at each pulsation return to their previous dimensions; and this elasticity is impaired, probably, not so much by the changes of the internal coat, as by those which, consecutively, ensue in the middle and outer coats.

In the preceding specimens the disease is shown affecting various extents of the arterial coats, and affecting them in various degrees in different parts. And since, wherever this disease exists, there is tendency to dilatation of the diseased portion, so, the various forms of aneurismal dilatation may, in general, be referred to the various extents in which the thickening of the internal coat has existed. Thus, if the whole circumference of any given length of an artery have been almost equally diseased, there may follow a general dilatation and growth of its walls, the shape of which dilatation may be principally determined by the form of the part previously diseased. Thus, probably, are produced the greater number of the *aneurismal dilatations* of arteries. But, if only a part of the circumference of an artery be diseased, or if one part be diseased much more than the rest, then this part may be alone or principally dilated, and while the rest of the arterial wall retains, more or less perfectly, its natural size and shape, this portion may be dilated and grow into a sac or *aneurism*, communicating, by a distinct lateral orifice or *mouth*, with the canal of the artery.

Differences in the structure of the wall of the aneurismal sac may take place in consequence of the removal of the inner and middle coats of the artery (or of one of them) either before or after the dilatation; hence the division of aneurisms adopted by many pathologists into *true* and *false*: the former being those in which all the coats of the artery are traceable in the sac: the latter, those in

which the middle and internal coats are wanting. The evidences for establishing such characters as the basis of an arrangement of aneurisms cannot, however, be discerned in many of the following specimens, in which the external form and connections of the aneurism appear to be matters of greater interest than the structure of the sac in each would be. Neglecting therefore this mode of arrangement, one is adopted in which, 1st, A certain number of specimens are placed to display the principal varieties of shape that may be assumed by dilatations of arteries: and 2ndly, The greater number are disposed according to their seats on the aorta nearer or further from the heart, and on each of the primary and succeeding branches given off from it.

The advantages that might result from an arrangement based on the structure of the aneurism, and the several changes connected with its progress, will be in great part supplied by the table of references placed at the end of the Series.

8 A. *Dilatation affecting uniformly the whole circumference of an Artery; Aneurismal Dilatations, or Cylindriform and Fusiform Aneurisms.*

1634. The arch and thoracic portion of an aorta, generally dilated and elongated. The chief enlargement is between the origin of the aorta itself and the origin of the innominate. This part of the trunk is nearly six inches long, and at its largest part three inches in diameter. It gradually attains this size, dilating as it proceeds onwards from its origin to about the middle of its course: then it again slowly diminishes, and at the origin of the left subclavian artery its diameter is about one inch and a half. The inner coat of the aorta is thickened, opaque-white, and indurated; its internal surface is tuberculated, irregularly wrinkled and cracked, with thick-set deposits of fatty and earthy matter in and beneath its surface. The large brachio-cephalic trunks are, though in a less degree, similarly diseased and dilated.

Presented by — Thompson, Esq.

1635. A heart, with its large vessels and some of the adjacent parts, dried. The aorta is in two situations greatly dilated. The first dilatation occupies the whole of the arch of the aorta, and affects alike its length and its whole circumference; it has an irregularly oval and somewhat saccu-

lated form, and measures about seven inches in length, and four inches in diameter. The trachea, right pulmonary artery, and vena cava superior are compressed by it. Earthy matter is deposited in small spots in its walls: the great brachio-cephalic trunks proceed from its upper part. After this dilatation, which both begins and ends almost abruptly, the aorta, for the length of an inch and a half, has a diameter of an inch and a quarter; and after this it is again uniformly but gradually dilated to a diameter of upwards of two inches. This second dilatation continues to the part at which the aorta passes through the diaphragm, then, presenting the shape of a *fusiform aneurism*, gradually ceases; and beyond this the vessel has its natural size. The heart and the other large blood-vessels are of ordinary size.

From the Museum of Sir A. P. Cooper.

1636. Part of an abdominal aorta, with the common iliac arteries. The lower part of the aorta is dilated in its whole circumference, but especially in its anterior wall. The dilated part measures four inches in length, and about two inches in its chief diameter. The dilatation both begins and ceases gradually; and at a short distance, both below and above the sac, the artery appears healthy. All the coats of the aorta are dilated in the sac; at its upper part they are dissected from each other in three layers, but lower down they appear too closely united for this to be effected. The inner coat lining the sac is superficially tuberculated, and at the cut margin of the back of the sac appears very thick, tough, and coarsely laminated. There are abundant deposits of fatty matter beneath its surface; but no coagula attached to its interior. Anteriorly the sac burst by a long irregular rent through all its coats. Death soon followed the hemorrhage.

The preparation is engraved in Mr. Liston's "Elements of Surgery," p. 141, Ed. ii. London, 1840.

From the Museum of Robert Liston, Esq.

1637. Part of a femoral artery, from the same patient as the preceding specimen. A small round aneurismal dilatation, an inch in diameter, is formed by the equal enlargement of the whole circumference and of all

the coats of the superficial femoral artery, an inch below the origin of the deep femoral. The cut margins of the sac show that the internal coat of the dilated part of the artery is irregularly thickened, and has abundant yellow deposit in thin layers beneath its surface: the middle coat appears thinner than is natural; the outer, of usual thickness but indurated. The rest of the artery is of ordinary size, and appears healthy.

From the Museum of Robert Liston, Esq.

1638. The popliteal artery, from the opposite limb of the same patient. Its whole circumference is equally dilated into an elongated oval sac, three inches and a half in length, and nearly two inches in diameter. The walls of the sac are thickened; at some parts its interior is uneven, and there are some thin layers of coagulum within it.

From the Museum of Robert Liston, Esq.

8 B. *Dilatation affecting the whole circumference of an Artery, but not uniformly: Sacculated Aneurismal Dilatation.*

1639. Part of a heart, with the first portion of the arch of the aorta. The whole circumference of the artery, from immediately above the valves to the origin of the innominata, is almost uniformly dilated in an aneurism nearly three inches in diameter. The sac is empty; its walls are a quarter of an inch thick, coarsely laminated, and very firm; there is a small low pouch, or secondary dilatation, just elevated from its posterior and upper wall. The internal surface of the sac is irregularly tuberculated, but polished and lined throughout by a continuation of the internal arterial coat, which is so thickened that it forms the greater part of the whole thickness of the sac. At the origin of the arteria innominata, the aorta regains its ordinary diameter.

From a plethoric man, thirty-eight years old, who died suddenly. He was a drunkard and long suffered with cough and dyspnœa. Blood was effused in large quantity in the pia mater.

From the Museum of George Langstaff, Esq.

1640. The arch of an aorta, the coats of which are thickened, consolidated, and on their internal surface unevenly tuberculated. The artery is generally dilated, and in two places its walls have yielded more than elsewhere, forming small wide-mouthed aneurismal pouches projecting beyond the general dilatation. *Presented by Sir Everard Home.*

1641. A section of the arch of an aorta, exhibiting an irregular aneurismal dilatation extending from an inch above the valves to the commencement of the descending or thoracic aorta. The dilatation appears to have occupied all the circumference as well as the whole length of this part of the artery; but, both before and beyond the situations mentioned, the artery has its natural size, and the dilatation commences and ends abruptly with well-defined borders, like those of the mouth of an aneurism. The dilated part of the artery measures in its greatest calibre between two and three inches in diameter; and its length is about nine inches. The internal surface of the dilatation is uneven, superficially tuberculated, and opaque, and there are abundant deposits of fatty and earthy matter beneath it; all the arterial coats are dilated together, and at the back of the preparation are dissected into three layers; here also are shown two small pouches pushed outwards from the general dilatation. In the distal part of the dilatation a large quantity of laminated coagulum appears to have reduced the channel for the blood to the ordinary size of the aorta; and some of this coagulum extends into the left subclavian artery, and fills its cavity. The orifice of the aorta, and its valves, are healthy. *Hunterian.*

1642. The arch and part of the thoracic portion of an aorta. They are generally, but not uniformly, slightly dilated. On the upper wall of the arch, about half an inch before the origin of the innominata, is a conical, round-topped pouch, about half an inch high, communicating with the aorta by a mouth rather more than half an inch in diameter. This pouch appears to be formed by a dilatation of the inner and middle coats alone of the artery, for its walls are very thin and transparent, and the external coat of the artery appears to cease at its base: if any of the

external coat be continued over the pouch, it is only an exceedingly thin layer. The rest of the internal surface of the artery is rendered very irregular and tuberculated by thickening of the internal coat and fatty deposit beneath its surface; and it is in many places deeply puckered in, and depressed in very small irregularly shaped pouches, which are just visible externally. *From the Museum of Robert Liston, Esq.*

8 C. *Dilatation of part of the circumference of an Artery; Aneurism; Coniform and Sacciform Aneurisms.*

1643. The aorta of a turtle, in which, without any obvious morbid change of structure, a small conical aneurism is formed by dilatation of a portion of all the coats. The base of the cone is formed by the mouth of the aneurism, and one of its borders projects a little, like a narrow semilunar valve. *Hunterian.*

1644. The first portion of the arch of an aorta, the inner coat of which is thickened, irregular, and contains numerous small deposits of fatty and earthy matter. The outer coat appears indurated. In two situations, immediately above the semilunar valves, there are small pouch-like, or coniform, dilatations of the coats, just discernible externally. *Hunterian.*

1645. Part of an abdominal aorta, with a portion of the sac of a very large aneurism of its trunk. (The rest of the sac is preserved dry, No. 3466.) The sac is formed by the dilatation and growth of a small and exactly circumscribed oval portion of the posterior wall of the aorta, just above the origin of the cœliac artery. The rest of the circumference of this part of the aorta, even to the margins of the mouth of the sac, and the trunk both above and below it, appear perfectly healthy. All the coats of the artery appear to have grown, and been alike dilated in the formation of the sac. The internal coat begins first to show disease at the mouth of the sac, which mouth is only an inch and a quarter in its chief diameter, the sac

itself having diameters of seven and nine inches. At this part, the internal coat is slightly thickened and opaque-white, but not so thickened as to form a prominent lip round the margin of the mouth. Within the sac the internal coat is perfect, but deeply wrinkled and tuberculated by patches of opaque-white thickening. In the depressions between its wrinkles there are portions of laminated coagulum. The middle and external coats of the artery are traceable on the cut edges of the sac, but the former appears very thin and rather dark-coloured. The anterior wall of the sac is closely united to the posterior wall of the aorta, over which it extends both above and below its mouth. *Hunterian.*

1646. The thoracic aorta, with parts of the arch and abdominal aorta of a young man. Two portions of the posterior wall of the trunk of the aorta, where it passes between the crura of the diaphragm, and just above the origins of the phrenic arteries, are suddenly dilated into two aneurismal sacs, which, lying close together, and being united by the adjacent tissues, appear externally as one flattened spheroidal tumour, about four inches in diameter, and attached by a narrow base to the back of the artery. The orifices by which the sacs communicate with the cavity of the aorta, and which represent the portions of its wall by the dilatation and growth of which the sacs were severally formed, are between one-half and three-fourths of an inch in diameter, oval, smoothly and roundly bordered, and about one-fourth of an inch apart; the partition formed by the portion of aorta remaining undilated between them, as well as some of the immediately surrounding part of the aorta, has its internal membrane wrinkled, tuberculated, and thickened with opaque-white patches and deposits of fatty matter. The sacs appear nearly filled with layers of coagulum; the upper one has burst through an oblique rent on the left side. The trunk of the artery, both above and below the aneurisms, appears perfectly healthy.

Presented by J. B. Sharp, Esq.

1647. A heart, with the arch of the aorta, and the adjacent parts. Almost immediately above the valves the whole circumference of the artery, but

especially the right half of the wall, is dilated into a large aneurismal sac. The dilatation extends as far as the origin of the arteria innominata, beyond which the aorta nearly recovers its natural size. The sac is nearly oval, and measures about five inches in its chief diameter. It is slightly constricted in the middle, in a circle which is indicated by portions of bristle, and which is formed by a ridge of the internal arterial coat, thickened, indurated, and opaque-white, like the mouth of an aneurismal sac. It is probable, therefore, that there was at first an aneurismal dilatation of part of the right wall alone of the aorta, and that subsequently the whole circumference and length of the first portion of the aorta were gradually dilated; whereby the former sac was carried outwards, and its mouth, greatly dilated, assumed the character of a constriction of the walls of a much larger sac. The walls of the sac are everywhere thin; the internal coat of the artery thickened, opaque-white, wrinkled, tuberculated, and mottled with fatty deposits, lines the sac in every part, except in a few spots, where it has been removed over the most considerable deposits of fatty matter. Beyond the constriction the internal surface of the sac is thinly covered with laminated coagulum; externally, portions of its walls adhere to the lungs on each side, and to the outer surface of the pericardium below. The heart is enlarged in all its dimensions; the walls of its cavities are thin and pale, and abundantly covered with fat.

Hunterian.

D. Aneurismal Dilatations and Aneurisms of particular Arteries.

8.—D 1. *Aneurisms of the Intra-pericardial portion of the Aorta.*

1648. The base of a heart, with the large vessels, the trachea, roots of the lungs, &c. The greater part of the first portion of the arch of the aorta is dilated into an aneurismal sac nearly five inches in diameter, which projects to the right between the trunk of the pulmonary artery and the

right auricle, pushing the former forwards, and the latter far backwards and downwards. The dilatation commences at the orifice of the aorta, so that the left ventricle opens immediately into the sac; but the dilatation is limited to that part of the arch which lies within the pericardium, and as the left side of this part is not involved in it, the length of the arch is scarcely increased. On the surface of the sac, as well as on that of the heart itself, the layers of pericardium are thickened and firmly adherent. The sac is nearly spheroidal; its internal surface is smooth, being lined with the internal coat of the artery, which appears in parts to be thickened and opaque. Thin layers of fibrinous coagula are adherent to that portion of the sac which is most distant from the axis of the artery. The walls of the sac are little more than half a line in thickness, but are strengthened by the adherent pericardium. The valves of the aorta are slightly thickened and opaque; but they are pliant, and were, probably, efficient. Judging by the portions which remain of them, the ventricles of the heart nearly retained their ordinary dimensions. The left internal jugular, subclavian, and innominate veins are full of old coagula, on which they have contracted; their obliteration was, probably, the consequence of the pressure of their common trunk by the aorta pushed upwards and forwards by the aneurismal sac. The right jugular and subclavian veins are larger than is natural, but the vena cava superior is somewhat compressed by the sac.

Hunterian.

1649. The base of a heart, with the arch of the aorta and other great vessels. Immediately behind and above the right semilunar valve of the aorta is the mouth of an aneurismal sac, which projected towards the right side, pressing upon the right auricle and ventricle and the trunk of the pulmonary artery, and which at length burst into the cavity of the pericardium. The sac is spheroidal, and measures nearly three inches in its chief diameter; its walls are thin, and their interior is dark and rough, except around the mouth of the sac, where they are smooth, white, and shining; the internal coat of the dilated part of the artery being here perfect. A great part of the cavity of the sac is filled with

laminated coagulum; its mouth is oval, smoothly bordered, and about half an inch in diameter. The sac has been laid open on the right side, so that the orifice by which it burst into the pericardium is not shown. A small aperture has also been made into it from the right ventricle, in the upper and posterior part of which it forms a large projecting tumour. The walls of the ventricle over this tumour are very thin, and for a wide extent are opaque-white. The posterior wall of the pulmonary artery is also pressed forwards by the sac, so that the orifice of this vessel is narrowed, and its posterior valve, included in the compression, is adherent to its walls. Besides this aneurism, there is, just beyond the part at which the pericardium is reflected from it, a dilatation of all the coats of the lower wall of the aorta, forming a second irregular aneurismal sac. The rest of the aorta is in a slight degree generally dilated; many parts of its internal surface, especially those which are close to the aneurisms, are thickened and tuberculated. The arterial valves are rather thickened and opaque.

From a gentleman fifty years old, of very full habit, who died suddenly. A large quantity of coagulated blood was found in the cavity of the pericardium.

From the Museum of George Langstaff, Esq.

1650. The first portion of the arch of an aorta, with parts of the ventricles of the heart, the pulmonary artery, &c. The right and posterior two-thirds of the walls of the aorta, through a length of nearly two inches above the angles of its valves, are dilated; and beyond this general dilatation, there are carried out, by further but more circumscribed dilatation, two aneurismal sacs. The dilated portion of the artery has thus an almost multilocular form; the mouths of the secondary dilatations, or aneurisms, are very large, and have well-defined, rounded, and smooth margins. All the coats of the artery are equally dilated in every part: the internal coat is in many places opaque-white, and there are numerous small deposits of fatty and earthy matter beneath its surface. At the lower part of the dilatation, the anterior aneurismal sac communicates with the pulmonary artery by an oval aperture, nearly half an inch

in its chief diameter, with sharp and smooth margins; as if blood had for a long time flowed from one artery into the other. The opening in the pulmonary artery is close by the angles of two of the valves: their tissue, and that of the adjacent internal coat of the artery, are thickened and opaque-white, but the rest of the pulmonary artery is healthy. There are only two aortic valves; they are thickened and opaque, elongated and narrow; and the orifice of the aorta is dilated. The trunk of the aorta beyond the aneurism, and that part of the wall which is not dilated, appear healthy. *Hunterian.*

1651. The adjacent portions of an aorta and a pulmonary artery. There is an aneurismal dilatation of a large portion of the right wall of the aorta immediately above the valves. A part only of the sac is preserved, to show two small smooth-edged apertures of communication between it and the cavity of the pulmonary artery. One of the apertures is round, and about a line and a half in diameter; the other oval, and three lines in its chief diameter.

The patient died with jaundice and dropsy. The disease here shown was not distinctly indicated during life.

Presented by Joseph Swan, Esq.

8.—D 2. *Aneurisms of the extra-pericardial part of the arch of the Aorta.*

1652. The base of a heart, with the arch of the aorta, a section of the sternum, and other adjacent parts. About an inch and a half above the free margins of the aortic valves, the anterior wall of the aorta presents the orifice of a large aneurismal sac. This orifice has an elongated oval form, and extends transversely across the wall of the artery; it measures nearly an inch in its chief diameter; its margins are smoothly rounded; the tissue adjacent to it within the artery is opaque-white, but not otherwise changed. The aortic valves and all the rest of the artery appear healthy; even that portion which is nearest to the mouth of the sac is not dilated.

The aneurismal sac is nearly spheroidal; and the smallness of its mouth gives it the appearance of being attached by a narrow pedicle to the wall of the artery: from above downwards, and from side to side, it measures in each direction about five inches: the several coats of the artery are so thinned and confused that they cannot be traced upon the section of the walls of the sac. The sac projects forwards and upwards; above and behind, it is in contact with the great arterial trunks, which proceed from the arch of the aorta, and its pressure has nearly obliterated the left subclavian; below, it is bounded by the pericardium; in front it is in contact with the sternum, which it has elevated to a distance of three inches from the aorta, besides making it unnaturally convex, and producing partial absorption of its substance. A great part of the sac is full of firm laminated coagulum; and at the sternum its proper walls appear to have been completely removed. *Hunterian.*

1653. Another section of the same parts, exhibiting an irregular opening in the tissues about the first rib, through which the aneurism burst. This section also shows that the laminated coagula are but loosely attached to the walls of the sac, and that their laminae are arranged in curves, nearly corresponding with those in which blood would flow as it passed from the narrow mouth into the larger cavity of the sac. *Hunterian.*

1654. A heart, with the arch of the aorta and its branches, the trachea, a portion of the sternum, and other adjacent parts. There is a large aneurismal dilatation of the right, anterior, and posterior walls of the arch, extending from within an inch of the commencement of the aorta to the origin of the arteria innominata. The sac has enlarged in nearly equal degrees upwards, downwards, backwards, forwards, and to the right, and, in a rather less degree, to the left side. It presses upon the trachea and œsophagus, and has nearly obliterated the vena cava superior; anteriorly it forms a small tumour through the sternum, which it has also raised to nearly four inches from the aorta. The sac is laid open both in front and at the side of the sternum, and appears in great part filled with lami-

nated coagulum. The aorta beyond the sac and its main branches appear healthy, except for a slight general dilatation of a part of the thoracic aorta. The heart is enlarged, and is covered with an unusual quantity of fat.

From the Museum of John Howship, Esq.

1655. The base of a heart, with its large vessels, and a part of the sternum, and of the right anterior wall of the chest. There is a very large aneurism, formed by dilatation of three-fourths, comprising the right posterior and anterior walls, of the first portion of the arch of the aorta. The dilatation extends every way, but chiefly forwards and to the right side, and the sac has made its way through the ribs, and forms a considerable tumour beneath and outside the right nipple. Posteriorly the sac has flattened and nearly obliterated the superior cava and the upper part of the right auricle, and has compressed, in a less degree, the right pulmonary vein and the left auricle. The walls of the sac are from one to three lines in thickness, tough, and coarsely laminated; they appear to be chiefly formed of the thickened and indurated internal coat. Parts of them being removed, its interior is shown nearly filled with laminated coagula, and, apparently, some shreds of lymph. The coagula are especially compact at the anterior part of the sac, a portion of which is separately suspended, and in which there is a central cavity surrounded by the coagula, and extending from the main cavity of the sac nearly to the surface of the integuments of the chest. The rest of the arch of the aorta, and what is preserved of the heart, appear healthy, and of ordinary size.

The patient was a bricklayer, thirty-four years old. The signs of aneurism existed for four years before death, and were for a time mitigated by repeated large bleedings. The beginning of the disease was ascribed to a strain in lifting heavy weights.

From the Museum of John Howship, Esq.

1656. A heart, with its large vessels, a portion of the anterior wall of the chest, and other adjacent parts. The whole circumference of the first part of the arch of the aorta, from just above its valves to the origin of the arteria

innominata, is dilated into an enormous aneurism. The sac is irregularly conical, and elongated from before backwards; it measures in this direction nearly eight inches; its diameter near the aorta is three inches, and at the sternum about five inches. The dilatation extends every way, but chiefly forwards; here the sac passes through the sternum and the adjacent parts of the ribs of the left side, and forms a large tumour in front of the chest under the left mamma. The walls of the sac are very thin; it has been torn open in front, and at the side, where it adheres behind the remains of the sternum. The interior of the sac is nearly smooth, and appears to be lined, at least over the greater part of its surface, by the dilated internal coat of the artery. It is constricted at the part where it passes through the sternum and ribs, presenting in this situation a smooth-edged circular orifice, by which its more distended portions without and within the chest communicate with one another. It contains a small quantity of fibrinous coagulum, and probably a large quantity has been removed. Posteriorly the sac has compressed the vena cava superior, and, in a less degree, the trachea, the pulmonary arteries, and the arteria innominata. Immediately beyond the sac the aorta has its ordinary size: the heart also appears healthy.

From a woman fifty-six years old. The disease was many years in progress, but did not produce much distress till the last three weeks of life, when a sudden and considerable enlargement of the tumour took place, and produced great difficulty of breathing. The other arteries, and the organs generally, were found healthy.

From the Museum of John Taunton, Esq.

1657. A similar preparation, exhibiting an aneurism in the same situation and of the same general form, but of somewhat larger size. The whole circumference of the first portion of the arch of the aorta is dilated, from within an inch of the valves to the origin of the left subclavian artery, and from this general dilatation there springs a secondary and partial, but much larger, dilatation of the anterior wall. This forms a great sac, which opens into the uniformly dilated part of the artery with a wide mouth, and extends forwards through the front and left side of the chest. The tumour

thus formed in front of the chest under the left mamma is five inches in depth. The mammary gland appears to have been completely absorbed, for the wall of the sac is in close contact with the skin, and the skin itself is thin and nearly sloughing. A small ulcerated opening in the skin on the left side of the base of the tumour is marked with a portion of glass. The sac has been laid open from the right side: that part of it which is outside the chest is nearly filled with firm dark coagula; that within the chest is empty, and its interior, formed by a continuation of the lining membrane of the artery, is superficially wrinkled. A large portion of the left lung is preserved adherent to the sac and compressed by it. The heart and the aorta immediately beyond the sac are of their natural size.

From a woman in whom the disease existed for fully nine years. Death ensued through repeated hemorrhages from the small aperture in the base of the tumour mentioned above, and from a similar aperture in the opposite part of the base, which is not shown in the preparation.

From the Museum of John Howship, Esq.

1658. A sternum, with the ends of the ribs, and the integuments and other tissues covering them, exhibiting a very large tumour, formed by the projection of an aneurism of the arch of the aorta. The interior part alone of the sac is preserved; it is nearly five inches wide, and has completely made its way through the middle of the sternum, and the adjacent costal cartilages; its walls are thin; it contains a large quantity of very compact laminated coagulum, loosely adherent to its interior; and the lungs adhere to it externally on each side. The skin upon the front of the tumour appears to have been near sloughing: it is dull white, and the cuticle is separated from it.

1659. The arch of an aorta, with the pulmonary artery, trachea, and other adjacent parts. An inch and a half from the aortic valves, and just beyond the reflection of the pericardium, the left and a part of the anterior and posterior walls of the aorta are dilated into a large flattened spheroidal aneurismal sac. The sac projects to the right upwards and

backwards; it has compressed and nearly closed the trunk and right branch of the pulmonary artery, the arteria innominata, the vena cava superior and right auricle, and has pushed the trachea backwards and to the left side. The sac has a spheroidal form; its mouth is circular, abrupt, smoothly rounded, and extends from the reflection of the pericardium to the origin of the arteria innominata, whose orifice is very narrow; its walls are a line in thickness, and all the arterial coats can be traced in their cut edges, thickened, indurated, and coarsely laminated. The distal part of the cavity of the sac is filled with firm masses of laminated coagulum. The parts around the aneurismal sac are thickened and consolidated; the internal coat of the artery before and beyond the sac is half a line thick, hard, opaque-white, coarsely wrinkled, and slightly tuberculated; the part of the aorta from which the sac proceeds is generally dilated in a slight degree, but immediately beyond it regains an ordinary size. *Hunterian.*

1660. A heart with a large aneurism of the aorta. The aneurism, which projects straight upwards, is produced by dilatation of the upper wall of all that part of the arch of the aorta which lies between the reflection of the pericardium and the origin of the left subclavian artery. It measures more than three inches from above downwards; and since the innominata and left carotid arteries arise from a part of its wall, these must have been raised to an unusual height in the neck. There is an aperture in the upper wall of the aneurism, at which, probably, it burst. The part of the aorta which is below and opposite to the sac is slightly dilated; the part beyond the sac, and the heart, are, in external appearance, healthy.

Presented by Sir William Blizard.

1661. The arch of an aorta with two aneurisms. The first aneurism is a round one, nearly two inches in diameter, which projects forwards, outwards, and a little downwards from the right side of the arch, just beyond the reflection of the pericardium. It has a wide round mouth, and is nearly full of firm laminated coagulum. The mouth of the other and larger aneurism is above that of the preceding, midway between it and the origin of

the arteria innominata. This sac is elongated, oval, and pouched; it extends upwards and outwards, on the right side of the innominata, and nearly parallel with it, to the under surface of the clavicle, to which it is closely attached: it contains only a small quantity of coagulum. The rest of the aorta is made irregular on its inner surface by abundant fatty deposits, and by thickening of its internal coat, but is of nearly ordinary size. All the branches from its arch appear healthy.

Presented by G. J. Guthrie, Esq.

1662. The arch of an aorta, with a large aneurismal sac proceeding from its posterior wall opposite the origins of the three great arteries. The whole of this part of the artery is dilated and elongated, so that the three trunks given off from it are unnaturally wide apart; there is also considerable dilatation of all the first portion of the arch, but in this part the dilatation is uniform. Posteriorly the aneurism opens into the trachea with a round aperture about three lines in diameter. The interior of the artery below the aneurism is uneven and tuberculated, but little if at all dilated.

From the Museum of George Langstaff, Esq.

1663. The arch of an aorta with the trachea. The posterior wall, and parts of the upper and lower walls of the arch, from the origin of the arteria innominata to the commencement of the thoracic aorta, are dilated into a large, elongated, transversely oval, and flattened aneurismal sac, which is partially filled with laminated coagulum. The sac pressed backwards upon the trachea, and burst into it, just above the bifurcation, with a small smooth-edged oval opening. The artery before and beyond the aneurism is slightly dilated: the trunks given off from the arch are healthy. The outer part of the sac, which was probably closely adherent to the left ribs, has been removed. *Hunterian.*

1664. A heart with its large vessels, the larynx, trachea, and adjacent parts. A flattened, transversely oval, aneurismal sac is attached by a narrow neck to the posterior and upper part of the arch of the aorta. The sac measures about four inches in its chief diameter; it lies across the lower and front

part of the neck; and opens with an oval mouth, half an inch wide, into the posterior part of the aorta, immediately below the origin of the arteria innominata. The sac pressed upon the trachea, narrowing its canal, and at length bursting into it with a small irregular opening in its anterior wall, just above the bifurcation. A bristle is passed through the aperture, and the œsophagus has been turned aside for its more complete exhibition. Before the bursting of the aneurism its pressure upon the trachea appears to have caused symptoms of obstruction of the larynx; for laryngotomy has been performed in the crico-thyroid space. Below the aneurism, the inner surface of the artery is rendered slightly irregular by thickening and morbid deposits beneath it; beyond the sac the artery appears healthy, and is not dilated. The heart is slightly enlarged.

1665. The arch of an aorta, with the vena cava superior, trachea, and other adjacent parts. The greater part of that portion of the arch which is between the reflection of the pericardium and the origin of the left carotid artery is dilated into a round aneurismal sac, the interior of which is unevenly tuberculated, but not rough. The hinder part of the sac compresses the trachea, and opens into that canal through five small apertures in its mucous membrane, between one and two inches above its bifurcation. Into one of these openings a bristle is passed; through others small portions of the rings of the trachea are exposed. The portion of the aneurismal sac connected with and near to the trachea contains fibrinous coagula. The portion of the artery beyond the sac is of natural size, but its internal surface is irregular with morbid deposits.

The patient was a man thirty-eight years old. For about five years before his death he had no pulsation in the arteries of the left arm, in consequence, it appeared, of contraction or obliteration of the left brachial artery, and of earthy matter and fibrinous clots partially obstructing the orifice of the left subclavian artery. Two days before death he expectorated a large quantity of florid blood, and had difficulty of breathing, with sense of suffocation. These were in some measure relieved, but returned shortly before his death.

Further particulars of the case are given in Mr. Crisp's "Treatise on the . . . Bloodvessels," p. 138.

Presented by Edwards Crisp, Esq.

1666. The arch of an aorta, with the larynx, trachea, œsophagus, and other adjacent parts. A spheroidal aneurismal sac, measuring about three inches in its chief diameter, is connected by a narrow base or neck with the upper and posterior part of the arch. The sac opens into the aorta with a round orifice half an inch in diameter, just behind and below the origins of the left carotid and subclavian arteries. Its walls, where its surface is free, are a line thick, tough, white, and coarsely laminated. Enlarging equally every way, the sac has pressed upon the left sides of the trachea and œsophagus. It has contracted the canal of the trachea, to the exterior of which its coats, rendered very thin by the pressure, were intimately adherent. It has destroyed a part of the wall of the œsophagus, into which, after a large mass of fibrinous coagulum had been protruded into it, the sac appears to have opened through two narrow channels, indicated by portions of straw. The œsophagus at this part is somewhat dilated; in the rest of its length it is healthy. The interior of the aorta adjacent to the aneurism is thickened and tuberculated, but little if at all dilated.

Presented by Sir William Blizard.

1667. The arch of an aorta, with portions of the pulmonary artery, trachea, œsophagus, and other parts. An aneurism is formed by dilatation of part of the lower and right wall of the arch of the aorta, nearly opposite the origin of the left subclavian artery. The orifice of the sac is irregularly oval and smooth, measuring an inch in its chief diameter; the sac itself has a somewhat greater diameter, and contains a large quantity of laminated coagulum. It has made especial progress downwards and backwards, passing behind and compressing the left bronchus, adhering to it and to the front of the œsophagus, and at length bursting into the latter through an irregular aperture about one-third of an inch wide. The rest of the aorta is of more than its usual size; there are abundant deposits of fatty and earthy matter in its coats, and patches of the inner coat are thickened and opaque-white. The œsophagus, except at the opening into it, is healthy, and so are the several other parts.

The patient, a man sixty years old, had cough and pain in the chest, and occasional difficulty of swallowing. Three days before his death he vomited a very large quantity

of blood. This gradually ceased, but he voided blood from the intestines, and on the fourth day the vomiting of blood recurred, and he was suffocated.

From the Museum of George Langstaff, Esq.

1668. The arch of an aorta, with part of the trachea, and adjacent bronchial glands. On the lower wall of the aorta, opposite, but a little beyond, the origin of the subclavian artery, close by the ordinary attachment of the ductus arteriosus, there is a small aneurism. The orifice of the sac is circular, about one-fourth of an inch in diameter, with smoothly rounded margins: the exterior of the sac is firmly adherent to the bronchial glands, and the adjacent part of the left bronchus. In the rest of the artery there are a few small deposits of fatty matter between the coats, but in other respects it appears healthy, and it is not in any other part dilated.

From a woman twenty-three years old, who died with phthisis. Tubercles and cavities were found in both lungs.

From the Museum of George Langstaff, Esq.

1669. A heart with its large vessels. Immediately beyond the origin of the left subclavian artery, a part of the upper wall of the arch of the aorta is dilated into an oval aneurismal sac, about three inches in its chief diameter, and flattened behind and before. All the arterial coats appear to be continued into the sac, but its walls are very thin; it communicates with the aorta by a mouth as large as the canal of the aorta itself, and has no coagulum deposited within it: the left subclavian artery is closely adherent to its outer surface. The position of the sac of the aneurism, at the part where the arch of the aorta makes a sudden turn downwards, is such that the blood, after passing through the second or upper part of the arch, must have gone straight into the sac. Thus, the sac being constantly pressed towards the left, backwards, and a little downwards, its lower margin has come to press upon the lower part of the arch of the aorta about an inch beyond the part from which itself proceeds; and, by this pressure, the aorta has been made to bend abruptly at and near the part to which the ductus

arteriosus is attached. The heart and all the rest of the aorta are of their natural size.

Presented by Sir William Blizard.

1670. A thin layer of coagulum, from an aneurism of the aorta; it adheres to a part of the sac. *Hunterian.*

1671-2. Other layers of the same coagulum. The fibrine in both specimens is remarkably firm, so that the surfaces of layers torn asunder appear like those of fibrous tissue.

The following record of the case was copied by Mr. Clift from one of the lost Hunterian Manuscripts:—

“ Case of Aneurism.

“ Thomas Norman, a private soldier in the 8th Regiment, aged fifty-five, says he had been a very healthy man. While on duty, at the latter end of the year 1782, he accidentally fell down while lifting a very heavy load, soon after which he felt a severe pain in his left side, which would frequently shift to the other, attended with difficulty of breathing, cough, and sickness at the stomach, and at times spitting some little blood. He had a sense of weight and uneasiness in the chest, about the middle of the sternum, for which complaint he had been frequently bled, which gave him some temporary relief. Medicines of various sorts had been given to him without the least benefit; vomits never relieved his sickness; blisters had been as frequently applied, but to no purpose.

“ About two years and a half after this accident, and about six months prior to his decease, he discovered a very small tumour on his sternum, nearly in its centre, and about the size of the tip of his finger, which rebounded very forcibly against it. He now made application to his officers, and from this time he did no more duty. On his admission to Chelsea Hospital, about three months before he died, the tumour on his breast had increased, from the upper part to the lower, for five inches, and from side to side much about the same. The tumour kept increasing in size from this time, so that a day or two before his death the circumference of the basis measured twenty-six inches; during the last four or five days the upper part of the clavicle began to slough, and continually discharged a small quantity of blood. The slough increased, and the discharge necessarily increased likewise, till he died. It may be necessary to remark that his urine for the last six weeks was so very turbid as to take the appearance of a very strong decoction of bark.

“ In most aneurisms the patients date them from some exertion they had been making, and, at the same time, feeling a pain in the part. However, it is most probable that that which they suppose a cause is rather an effect, and that the aneurism had made some advances, but was only felt at the time of the exertion.”

8.—D 3. *Aneurisms of the Thoracic Aorta.*

1673. A thoracic aorta, in the upper half of which there is a large aneurism. The dilatation affects the whole circumference of the walls of the artery, and extends from the origin of the left subclavian artery to within about three inches of the diaphragm. The form of the sac is oval; but a large portion of it is dilated beyond the rest of its surface downwards and backwards. Its walls are thin, but consolidated externally with the lung and other adjacent tissues, which are firmly adherent to their outer surface; its interior is rough and tuberculated; and at the lower part is nearly full of laminated coagulum. At the anterior and lower part, the sac opens through a rent an inch long into the adjacent part of the left lung, which was firmly adherent to it, and is consolidated by blood effused into its texture. The left subclavian artery, arising from the aorta near the commencement of the dilated part, has its orifice nearly closed with a mass of fibrine; a bristle is passed through the remains of its canal. The aorta, both before and beyond the sac, is generally, but slightly, dilated; and, just before the large aneurism, presents two small pouch-like dilatations of its anterior wall.

From a strong man, forty-five years old. He complained of cough and palpitation of the heart for some months, but the nature of his disease was not suspected. He died suddenly with copious hemorrhage into the left pleura, the blood after filtrating into the lung having burst through its anterior surface, at the part now more widely laid open. The aortic and mitral valves were extensively diseased, and the heart was enlarged.

From the Museum of George Langstaff, Esq.

1674. The arch of an aorta, with parts of the thoracic aorta, the spine, and the ribs. A large aneurism is formed by the dilatation of about four inches of the posterior wall of the upper portion of the thoracic aorta. The sac is of spheroidal shape, five inches in diameter, and flattened before and behind. It extends chiefly in the transverse direction, in the posterior mediastinum, across the front of the spine, and behind the

pleuræ. It has produced absorption of the left sides of many of the dorsal vertebræ, and has made its way through the necks of some of the ribs, between which it projects in a small tumour beneath the deep muscles of the back. The walls of the sac are thin; they gave way just before death, and opened its cavity into the left pleural sac: nearly all the remains of its cavity are full of dark and firm laminated coagula. The aorta, both before and beyond the sac, is of ordinary size.

The patient was a woman twenty-six years old. Obscure signs of the disease existed for a year; she died suddenly with intense dyspnœa.

From the Museum of John Howship, Esq.

1675. An aorta, with parts of the dorsal portion of the spine, the ribs of the left side, and the muscles and integuments of the back. A very large aneurism, formed by dilatation of about three inches of the left and posterior wall of the upper part of the thoracic aorta, has made its way between the third and sixth ribs, destroying all the tissues between them, and projecting in a deep and broad tumour under the integuments of the back, close to the left side of the spine. The tumour here formed is larger than that within the chest, circular and flattened, about three inches in depth, and six in width. The integuments are healthy. The sac of the aneurism is entire, and covered on its anterior surface with healthy pleura. The artery both before and beyond the sac is somewhat dilated.

The patient was a Lascar, in whom the disease first appeared as a pulsating tumour in the situation of the left scapula, between two and three years before death. About a month before he died his left leg and foot, and soon afterwards those of the right side, became gangrenous.

Presented by Sir William Blizard.

8.—D 4. *Aneurisms of the Abdominal Aorta.*

1676. Part of an abdominal aorta, the lateral and posterior walls of which, through a length of about three inches directly above the bifurcation, are dilated into a large and wide oval aneurismal sac. All the arterial coats

are dilated; the internal coat, where it lines the sac, is irregularly seamed and tuberculated; both it and the other coats appear to be thickened, and to have soft fatty matter deposited in them. Above and below the aneurism the artery appears to be healthy. The anterior wall, opposite the great dilatation of the rest of the circumference of the artery, is diseased like the rest, but in a much less degree, and is not dilated. The right common iliac artery is reduced in size; the left is larger than is natural.

Presented by Sir William Blizard.

1677. The lower part of an abdominal aorta, with the common iliac arteries. The aorta, from the origin of the inferior mesenteric artery to the bifurcation, is dilated in its whole circumference into a large, oval aneurismal sac, obliquely elongated, measuring nearly five inches in length, chiefly projecting forwards, and presenting anteriorly a broad transverse uneven rent, by which it burst into the peritoneal cavity. There is also an aperture in the posterior wall of the sac, which was made in separating it from the vertebral column. Except at the anterior part, the walls of the sac are from two to four lines in thickness, dense and compact, so that it cannot be said of what tissues they are composed. The interior of the sac is exposed by the removal of parts of its walls; it is irregularly wrinkled, and appears to have contained little or no coagulum. Part of the vena cava inferior is attached to the exterior of the sac, but is not compressed by it.

From the Museum of John Howship, Esq.

1678. Part of an abdominal aorta, with a large aneurism proceeding from it near the origins of the superior mesenteric and cœliac arteries. The sac, which is formed by dilatation of a small circumscribed portion of the posterior wall of the artery, is more than six inches in diameter; its mouth is oval, an inch wide; its walls are from one to three lines in thickness; its cavity is empty; its inner surface is uneven and rough, with flakes of fibrine adhering to it.

Presented by Sir William Blizard.

1679. The abdominal aorta of a jaguar [*Felis Onca*], of which a small portion of the wall is dilated into a spheroidal aneurismal sac, about two inches in its chief diameter. The sac is nearly full of firm laminated coagulum. Around its mouth, and in isolated patches on several other parts of the artery, the internal coat appears slightly thickened, and there are deposits, probably of fatty matter, beneath it. Over many of these deposits also, small portions of the inner coat have been removed, leaving small smooth-edged apertures like ulcers, some of which are very close set, and give the remains of the internal coat, in some parts, an irregular reticulated appearance. Wherever this disease has made much progress, the artery is slightly dilated.

Presented by the Council of the Zoological Society.

8 D 5. *Aneurisms of the Innominate Artery.*

1680. The arch of an aorta, with its great branches, the larynx, trachea, and other adjacent parts. The first and second portions of the arch of the aorta are slightly dilated, and in a few parts pouched out. There is also slight general dilatation of the innominate artery, and nearly the whole length of its anterior and inner wall is dilated into a large aneurismal sac, which has pressed forwards and inwards, and in some degree displaced the trachea. The sac has been opened in front and filled with wool: the state of its walls and contents cannot be seen, but the inner coat of the arch of the aorta just below it is irregularly thickened, and contains a large quantity of fatty and earthy substance. The carotid and subclavian arteries appear healthy.

Presented by Sir Everard Home.

1681. The arch of an aorta, with its branches. There is a large aneurism of the innominate artery, formed by dilatation of nearly the whole of its length and circumference, but especially of its posterior and lateral walls. The sac of the aneurism has an irregular spheroidal shape, with two large

oval pouches prolonged downwards from its lower part: its interior, partially exposed, is nearly full of laminated coagulum. The right carotid artery adheres to the front of the sac, and is flattened by it: the right subclavian adheres to its lower part, and is obliterated by its pressure. The right pneumogastric nerve, which is much enlarged, is also attached to the front of the sac, nearly an inch to the right of the carotid artery; in its further course, the nerve is imbedded in the walls of the sac, but its recurrent branch appears again at the back part, in a groove between the main portion of the sac and one of its pouches. The arch of the aorta and the other arteries are of ordinary size.

From the Museum of Sir A. P. Cooper.

1682. A heart, with its large vessels, and other adjacent parts, dried. The greater part of the walls of the innominate artery, especially its anterior and lateral walls, are dilated into a nearly globular aneurismal sac, which measures three inches and a half in diameter, and in its progress has come in contact with the upper part of the sternum, and pushed aside and compressed the œsophagus, trachea, and vena cava superior. The right carotid and subclavian arteries proceed from the sac, at a distance of about three inches from the arch of the aorta, and appear healthy. The arch of the aorta is generally dilated, and has earthy deposits in its coats. The heart is healthy.

From the Museum of Sir A. P. Cooper.

1683. A heart, with the arch of the aorta, and its large branches, dried. The anterior wall of the upper half of the innominate artery is dilated into an aneurismal sac of an irregularly oval form, which measures six and a half and five inches in its two chief diameters. The anterior part of the sac is attached to the upper piece of the sternum, the first rib, and the clavicle, in all of which it has produced considerable absorption: from its posterior wall proceed the trunks of the right subclavian and carotid arteries, and, by the situation at which they are given off, it is evident that this wall of the artery is not elongated, notwithstanding the great extension which a part of its anterior wall has undergone. Between the

first rib and the clavicle the subclavian artery is obliterated, probably by the pressure of the aneurism. The arch of the aorta appears to have been slightly dilated, but it may have been distended in making the preparation.

From the Museum of Sir A. P. Cooper.

1684. A heart, with the arch of the aorta. From just above the valves, to the origin of the left subclavian artery, the aorta is dilated to nearly three inches in diameter, all its walls having equally yielded. Its inner coat is in many places thickened and opaque white; in many also it is irregularly elevated and cracked over abundant deposits of fatty substance, and plates of earthy matter. The innominate artery is almost uniformly dilated to more than twice its ordinary size, and appears to have burst by a large oblique rent near its origin. The subclavian and carotid arteries, and the aorta beyond their origins, are a little dilated. The heart is generally enlarged; the left ventricle especially is very much so, and its walls are hypertrophied.

8 D 6. *Aneurisms of the Carotid Arteries.*

1685. A section of the upper part of the trunk of a common carotid artery, with its bifurcation. A portion of the inner wall of the upper part of the carotid, about half an inch in length, near the bifurcation, is dilated into an oval aneurism an inch and a half in its chief diameter. All the coats of the artery appear to be engaged in the dilatation, and the sac is nearly full of laminated coagulum. The upper part of the sac, towards which the current of blood must have been directed, does not contain coagulum; those layers of the coagulum which are next the lower wall of the sac are very firm and compact; those near the cavity are softer, and loosely connected.

Hunterian.

1686. A heart, with the great arteries of the chest and neck, the larynx, trachea, and other adjacent parts. There is a large spheroidal aneurism formed

by the dilatation and growth of an oval portion of the upper and posterior wall of the left common carotid artery. The sac measures between four and five inches in its chief diameter; all the adjacent parts are adherent to its exterior; its mouth is about an inch in diameter, oval, smoothly and roundly bordered, seated about an inch below the bifurcation of the carotid. In its growth, the sac has compressed the left side and back part of the larynx and trachea. It is nearly full of laminated coagulum. Both below and beyond the sac, the internal coat of the artery is much thickened and indurated, and its inner surface is rendered irregular by morbid deposits. This is especially the case near the mouth of the sac, where also the artery is slightly dilated. The aorta is similarly diseased, but in a much less degree; the heart and the other large arteries appear healthy.

Presented by Thomas Blizard, Esq.

1687. An aneurismal sac of an oval form, and about three-fourths of an inch in its chief diameter, from the right internal carotid artery of a lady. It is nearly full of coagulum. *Hunterian.*

1688. A rather larger globular aneurismal sac, from the left internal carotid artery of the same patient. It also is nearly full of firm and compact coagulum. *Hunterian.*

The following history of the case was published in a "Case of Aneurisms of the Carotid Arteries," by Sir Gilbert Blane, in the "Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge," vol. ii., p. 192. London, 1800.

"Case of Aneurisms of the Carotid Arteries."

"The subject of this case was a lady who had, till a few years before her death, enjoyed a good state of health, had many children, once three at a birth at or near the full time. She had always lived very full in point of eating, but had been temperate in drinking. Several of her family had been affected with complaints of the head, particularly apoplexy.

"About five years before her death, being then sixty-four years of age, she was suddenly seized with a fit of giddiness and dimness of sight, succeeded by acute pain in the forehead, which remained for some time. The indistinctness of vision continued for six months.

" After this she was at intervals seized with giddiness, headache, and imperfect vision. She had a similar attack two years after the first, from which also she recovered to a certain degree. From this period she continued to be subject, from time to time, to the above-mentioned symptoms as long as she lived.

" She for some time saw objects double, but the particular period of this could not be ascertained.

" I first visited her on the 9th of March, 1791, about sixteen months before her death. She had some time before this betrayed signs of mental derangement, and I found her at this time evidently maniacal. The symptoms, however, were so mild, that she was sensible of her own situation, frequently talking of it, and lamenting it. She recovered from this attack in three weeks.

" In September following she had another attack, more severe, and with more fever. She recovered from this in a month.

" In the middle of December following she became insane to a great degree, and this attack seemed to have been brought on, or at least aggravated, by strong emotions of joy and vanity upon her daughter marrying a man of very high rank. She was now violent and unmanageable, sometimes in gay and elevated spirits, at other times depressed, again facetious, and almost always refusing food, drink, and medicines.

" She continued in this state till the first week of February, 1792, when she recovered her senses.

" On the 4th of June following she became affected with giddiness, redness of the eyes, and numbness of the hands. She expressed herself conscious of approaching mania, and it came on with great violence, attended with symptoms of fever. On the 19th the fever increased, with aphthous sores on the throat. The alienation of mind continued, but evidently partook more of mania than feverish delirium. She continued in this state till her death, which happened on the 30th of this month, in the sixty-ninth year of her age.

" The chief means used for her relief at the different periods of my attendance were taking away blood from the head or near it, purgatives, antimonial medicines, abstinence from animal food and fermented liquor, from which she seemed to derive temporary benefit.

" Upon examining the body, there was no appearance in the brain itself that could in any way account for the symptoms. There was, indeed, a greater quantity of fluid than common in the ventricles, and the surface of it was moister than it is usually found in a sound state; but in all other cases which have occurred to me of organic affections of the brain proving fatal, except those which are sudden, such as apoplexy, there has been a preternatural quantity of fluid in its ventricles. There were also spiculæ of bone in the membrane forming the falx. The inner substance of the crura cerebri was of a brown colour, and more tender than natural. The optic nerves were smaller than natural, as if they had been wasted. The septum lucidum was more than usually dense.

" But the morbid appearance in this case, which was so singular, and to which the symptoms of complaint seem chiefly referrible, was two bulbs, about five-eighths of an

inch in diameter, filling up the hollow on each side of the sella turcica, which were evidently dilatations of the carotid arteries, and, from their being filled with laminæ of coagulated blood, there could be no doubt of their being aneurisms of these arteries. The dissection was made by Mr. Hunter, assisted by Mr. Home, in the presence of Dr. Jenner and myself, and all concurred in opinion that these tumours were aneurisms. The one on the left side was the largest. That on the right side communicated with the cavity of the artery, which was not the case with the other."

1689. Parts of common, external, and internal carotid arteries. There is an aneurismal dilatation of the internal carotid artery, commencing an inch and a half from its origin. The sac is of an oval form, measuring in its chief diameter, which is directed vertically, nearly two inches; its walls are thin and torn, and it is lined with thin layers of fibrine. It appears to have been formed by dilatation of the whole circumference of the artery, for the healthy portions of the trunk open into its upper and lower ends. The external carotid artery appears to be obliterated just above the origin of the facial artery.

The aneurism opened by ulceration into the pharynx.

Presented by G. J. Guthrie, Esq.

1690. A large aneurism of the left external carotid artery, with the tongue, pharynx, larynx, and other adjacent parts. The aneurismal sac is nearly globular in form, and measures three inches and a half in diameter. It is close by the origin of the artery, with the cavity of which it communicates by a narrow oval aperture, about one-third of an inch in length, and directed almost vertically. This aperture is indicated by a portion of whalebone, which is passed from the common carotid artery, through the commencement of the external carotid, across the aperture, and then through the continued trunk of the external carotid. The walls of the sac are a quarter of an inch thick, formed of dense tissue, in which none of the coats of the artery can be discerned; its form and general appearance are, however, such as indicate that it was formed by dilatation and growth of that portion of the coats of the artery at which now its mouth is situated. Its cavity is nearly full of firm laminated coagulum. By its pressure, the sac has displaced the larynx, the mucous membrane of

which is very œdematous. The common and internal carotid arteries, as well as the continued trunk of the external carotid, even to the borders of the mouth of the sac, are perfectly healthy. *Hunterian.*

8 D 7. *Aneurisms of the Subclavian and Axillary Arteries, and of their Branches.*

1691. A right subclavian artery, with a small portion of the sac of a very large aneurism which communicated with the artery near the giving off of the thyroid axis. The trunk of the artery, which is laid open, is quite healthy. At the division into the right subclavian and carotid, the internal coat of the innominate artery is a little elevated by fatty deposit. The sac is lined with fibrinous coagula. *Hunterian.*

1692. The right axillary artery of the same patient. Its canal, through a length of an inch and a half beyond the aneurismal sac, is completely full of firm coagulum. There is no apparent alteration in the texture of the artery, but the adjacent tissues are hardened and adhere closely to it. *Hunterian.*

1693. Section of a mass of fibrinous coagulum, nearly six inches in diameter, from the aneurism last described. The circumference of the mass is laminated; its centre is compact, and almost homogeneous. It has been hardened by some saline solution.* *Hunterian.*

1694. A heart, with its large vessels, and the right subclavian and axillary arteries. There is an aneurism of the axillary artery at the part where the brachial plexus of nerves is in nearest relation to it. The sac is about an inch in diameter, globular, and compactly filled with laminated coagula, into which a section is made from behind. The sac appears to be formed

* It was in this preparation that Sir Everard Home found the crystals of sulphate of lime, and phosphate and muriate of soda, described by him in the Croonian Lecture on "A farther Investigation of the component parts of the Blood," Philosophical Transactions, 1820, vol. cx.

by dilatation of all the coats of a small portion of the upper and posterior wall of the artery. The brachial plexus is closely adherent to the sac externally. Beyond the sac the canal of the artery is much narrowed, and its interior near the mouth of the sac is uneven and rough; but between the sac and the heart the artery is healthy. The aorta has but two valves; both of them are thickened and opaque, and their margins are covered with yellowish warty excrescences. There is a growth of the same kind on the wall of the aorta behind the larger valve. The left ventricle is dilated and hypertrophied.

1695. An enormous aneurism of the right axillary artery, with the adjacent parts of the shoulder and upper arm, and the arch and descending portion of the aorta. The aneurism occupied the whole axilla, elevating the shoulder, and pressing in the side of the chest: a portion of it extends two inches downwards on the inner side of the biceps humeri muscle; the pectoralis minor is shown, and the brachial plexus of nerves is stretched and closely united to the anterior and upper surfaces of the sac. The general form of the sac is nearly globular, and it measures from six to eight inches in its several diameters; the portion which extends by the side of the biceps is cylindriciform, and about one inch and a half in diameter. The aorta is dilated to about one-half more than its natural size; the innominate, carotid, and the left subclavian arteries are but little dilated; the right subclavian is twice as large as is natural, from its origin to within an inch of the part at which two ligatures have been applied. Between the upper ligature and the dilated portion, the trunk of the artery is much contracted. At and between the ligatures the artery is involved in sloughing tissue, and its condition is not clearly discernible.

The patient was a man forty-three years old. The swelling in the axilla had been observed for about three months, and its origin was ascribed to a fall on ice, when the arm was extended, six months before it was first noticed.

The tumour, when the operation was performed, was nearly twice as large as it now appears; the arm was enormously swollen, its upper part being hard, the lower part, as well as the compressed and flattened side of the chest, soft and œdematous; the temperature of the arm was natural, but it was insensible and motionless, and the pulse

of the radial artery could not be felt. The subclavian artery was exposed by operation, and an armed needle was passed under it; on withdrawing the needle considerable hemorrhage ensued, but soon ceased; for security, a second strong ligature was placed on the artery three-fourths of an inch nearer to the heart, close to the edge of the anterior scalenus muscle. At this part the artery was dilated, and its coats felt soft and thickened. For some days after the operation the case made favourable progress. On the fifth day there was increased pain in the tumour and in the arm, and much constitutional excitement. The patient was bled to eight ounces, and an anodyne was given with great benefit. On the thirteenth day there was slight oozing of blood from the wound, and on the fourteenth an oozing of dark putrid blood; it was arrested by compression, but the patient, next day, died exhausted.

After death the wound was found full of coagulated blood; the upper ligature lay loose among the coagula detached from the artery, and enclosing a slough (in the preparation it has been replaced in the situation which it occupied); the lower ligature (the first that was applied) was still attached, though the vessel at this part was extensively ulcerated. It appeared that the hemorrhage must have proceeded from this part. Where the second ligature was applied, the vessel was contracted, and contained a coagulum. The axillary vein passed over the inner part of the sac, adhered firmly to it, and was obliterated three inches below the clavicle. Below the tumour the brachial artery was found of small size, and full of coagula; all the anastomosing vessels were much enlarged.

The case is further related in the "Edinburgh Medical and Surgical Journal," 1827, vol. xxvii., p. 4.

From the Museum of Robert Liston, Esq.

1696. The arch of an aorta, with its great branches, the last cervical and first two dorsal vertebræ, the first left rib, and other adjacent parts. There is a nearly globular aneurism of the axillary artery, about an inch and a half in diameter, immediately beyond the first rib. It appears to be formed by dilatation of the whole circumference of the artery: the part of the trunk between it and the aorta is dilated and elongated; that below it appears healthy. A ligature composed of four stout silk threads has been tied round the artery, where it crosses the first rib, just beyond the insertion of the scalenus anticus muscle. Some of the branches of the brachial plexus of nerves are adherent to the aneurismal sac; their trunks are shown in the natural relations to the artery at the seat of the operation. The arch of the aorta is, generally, somewhat dilated and considerably elongated; as are also the innominate, right subclavian, axillary, and carotid arteries. Part of the right subclavian

and axillary has been laid open, and exhibits a small partial dilatation, (besides the general dilatation) in the situation corresponding to the larger aneurism on the opposite side. The inner coat of this part of the artery is uneven and tuberculated by thickening and deposits of fatty matter beneath it.

Presented by Sir William Blizard.

1697. The lower portion of a radial artery, on which, nearly an inch above the origin of the arteria superficialis volæ, there is a small aneurism. The sac is about one-third of an inch in diameter; it is formed by dilatation of all the coats of a narrow portion of one half of the circumference of the artery: its mouth is therefore elliptical and directed transversely to the axis of the vessel; its walls are thin; its cavity nearly full of firm coagulum. The rest of the artery appears healthy.

From the Museum of George Langstaff, Esq.

8 D 8. *Aneurisms of branches of the Abdominal Aorta.*

1698. Part of a splenic artery, with many of its branches. On the trunk of the artery there is a small irregularly shaped aneurismal sac, the cavity of which is nearly full of fibrinous coagula.

From a woman sixty-four years old. She died suddenly of apoplexy; and earthy deposits were found in all the main arteries.

From the Museum of George Langstaff, Esq.

8 D 9. *Aneurisms of the Iliac Arteries and their branches.*

1699. An external iliac artery, with part of an aneurismal sac which appears to have been formed by dilatation of all its coats. The coats of the vessel above the aneurism are thickened; their internal surface is corrugated; in two situations there are large deposits of earthy substance, and in both these the vessel is somewhat dilated. *Hunterian.*

1700. An external iliac artery dilated in its whole circumference, and through nearly three inches of its length, into a regularly oval aneurismal sac. The walls of the sac are two or three lines in thickness, and appear to be formed of all the coats of the artery, consolidated with the tissues around them. Its interior is deeply corrugated, and in part covered with layers of fibrine.

There can be little doubt of this aneurism being described in the following case:—

“*June, 1762.*—I opened a man, who died of aneurism bursting in his right ham. He had four in all that were visible before death, viz., one in the right groin, just behind Poupart’s ligament; one in the middle of the thigh, just before the artery dips into the tendon of the Triceps muscle (this was the smallest); a third in the ham, which was the one that burst; and the fourth was in the left ham. The first appearance of these was in the preceding winter; for he knew nothing of them when I saw him in November, 1759, when he had a rupture, and had the operation performed by Mr. Arnold.

“He had been in St. George’s Hospital for some time, but finding no relief, he came home. As it was expected that it would soon burst (some time before it did), he was desired to be attentive to it, and the moment that it did burst, to apply a tourniquet above the part, which he did. He died in a few days after.

“He was opened, which was chiefly done by me. We first opened the belly to examine the rupture. The intestines were all sound: the epiploon was wasted, and at the lower part it adhered to the rings, by, as it were, two or three small strings: for these were almost the only remains of it. Here was a little remains of the sac, which seemed to go as far as the tendon of the muscle. The cicatrix did not seem to be very strong at these parts.

When Mr. Arnold performed the operation, he cut away a good deal of the epiploon, and left the cut surface on the bottom of the wound, which, we may suppose, adhered there; as the part that was cut away was pretty bulky, we must suppose it was near

the whole thickness of the epiploon drawn together. If that was the case, then the whole thickness of the epiploon must have led down to this part. What became of this thickness afterwards; for it only appeared like two or three strings? It must have wasted.

“ We next examined the aneurism in the right groin, and found it just a dilatation of the artery, pretty near equal on all sides. It was of an elliptical figure; the long axis in the axis of the artery; and had just the appearance of the uterus of an animal that has a young one in it. The artery was traced down to the next one, which was smaller, but of the same kind. Then we came to the one in the ham, which was very indistinct upon the account of the extravasated blood. One side of it was entirely gone, viz., that next to the bone of the thigh, which was eroded or carious; and on that side it had burst. On the side next to the skin we could trace the communication between the sound artery above and that below. The coagulated blood here was of two sorts, viz., a recent, which was like congealed blood, and red: the other was like leather, and layers upon layers, becoming stronger and stronger towards the coats of the artery, which became so much so as hardly to be distinguished from the artery itself.

“ Upon slitting up the others, the same thing was observed as to the coagulated blood of old standing. We then examined the other thigh, beginning at the groin, where we observed very small dilatations between that and the one in the ham. There were three small ones that had just the appearance of the valvular parts of a vein, which in the vein is rather thinner and wider: these we did not open. I dissected out the one in the ham, and found that it had not dilated equally all round; for on that side next to the bone the artery was dilated or pouched out; and on the opposite, the two canals lay nearly in the same line, and as it were continued into one another, something like the two venæ cavæ and auricle, but not so angular, some-

thing in this form—



“ When squeezed it felt as if it had something in it that adhered to it, for it could not be moved from place to place, and when opened we found it to be coagulated blood adhering very firmly to the coats of the artery; and, indeed, not to be separated, for we could hardly tell which was which; and as we traced this coagulum towards the centre it became softer and softer, until we came to a cavity filled with common coagulated blood.

“ Would not an artery's becoming larger equally all round show that it is from a stretching of the coats?”—*Hunterian MS.: Dissections of Morbid Bodies*, No. 62.

1701. The trunk of a pudic artery, with an aneurism an inch in diameter, and nearly full of fibrinous coagulum.

The following history was copied by Mr. Clift from one of the lost Hunterian Manuscripts:—

“ Nov. 1779.—A man was taken into St. George's Hospital who had a tumour

under the left glutæus major muscle, and which had a strong pulsation in it; besides which, he was in a bad state of health, of which he died. I examined him after death, particularly at this part. When I dissected off the glutæus maximus of this side, beginning from its posterior edge, I immediately discovered the tumour, which was about the size of a large walnut, situated exactly upon the ischiatic notch, and adhering to the ischiatic nerve as it passes out from the pelvis. I suspected that this was not the only part of the tumour, and that it most probably came from the pelvis, but found no part of the tumour within that cavity, nor disease in the pelvis of any kind. I then cut out the whole tumour with its surrounding connections. I first examined the arteries leading to it; I found that when the probe was introduced into one of them, that it went directly into the tumour. On slitting up this artery on to the tumour and through it, I found that the artery was sound till it dilated at once. The coats of the artery were strong, like the coats of many encysted tumours. It contained coagulated aneurismal blood with some recent. The artery going out of this dilatation was obliterated, so that there was no outlet for the blood. The artery proved to be the *Pudica interna*. There were none of the larger arteries continued within the abdomen or thorax that were in the least aneurismal, therefore most probably none of the others, or they would most probably have been felt while alive."

8 D 10. *Aneurisms of the Popliteal Artery.*

1702. The sac of a popliteal aneurism, with the arteries above and below it injected and dried. About half the circumference of the artery, and three inches of its length, are dilated into the sac. The vein, in close contact with the sac, is obliterated. *Hunterian.*

1703. "An aneurism of the popliteal artery of a man at St. George's Hospital. The thigh-bone and tibia are sawed down. A section is removed from the aneurism, close to the going in and coming out of the [femoral and posterior tibial] arteries. The crural artery going in is almost direct; [that is, it opens into the uppermost part of the elongated oval sac;] while the artery going out below is not at the opposite end [of the sac], being very near the entrance of the crural artery, the aneurismal bag having pushed down along the side of the going out artery. The crural artery, before it enters, for some way, is very much contracted, especially at its orifice: [its internal coat also, for about two inches above the

aneurism, is thickened, deeply wrinkled, and has fatty deposits beneath its surface]. The artery had given way or dilated on that side next the bone, and was filled with coagulated blood. It is most probable no blood passed out when alive [that is, no blood passed from the sac into the lower portion of the popliteal artery], as no injection passed out, although the injection was fine glue."—*Hunterian MS. Catalogue*. The interior of the sac is formed by the inner arterial coat diseased in the same manner as the portion next above the sac: above this portion and below the sac, all the coats of the artery appear nearly healthy.

1704. "The section [of the aneurismal sac] which was removed from the preceding, upon which is a part of the popliteal vein, showing how much it is compressed, probably admitting no blood in the living body. Into it is introduced a black bristle."—*Hunterian MS. Catalogue*.

1705. "An aneurism of the other popliteal artery of the same man, which was felt when alive, but not large enough to be seen. This artery was giving way more on one side than another, which is pushed out into a pouch, but hardly begun to descend. The crural artery, for some way, like the former, having also three aneurismal sacs beginning in it."—*Hunterian MS. Catalogue*.

There is an almost exact symmetry of the diseased changes in the corresponding parts of these two arteries above the aneurismal sacs. In both alike, and to the same extent, the internal coat is irregularly thickened, and contracted in prominent wrinkles, which intervene between shallow pouches. In both, also, there are scattered thin deposit of fatty matter beneath the inner surface; and in both, while the middle coat appears of ordinary thickness, the external coat is indurated and consolidated with the surrounding tissues. The sac is, in this specimen, much smaller than in the preceding, but it has the same structure, and, like it, is formed by dilatation of a short portion of the whole circumference of the artery with a predominant dilatation of one half of the circumference.

1706. A popliteal artery, with which a large aneurismal sac is connected. The cavity of the artery is exposed above the sac, and appears healthy to within a short distance of it. Just above the sac, which was probably formed by dilatation of all the arterial coats, the artery is contracted, and its coats are thickened; thus, its opening into the sac (marked by bristles) is very small, and below the sac its canal is nearly obliterated. The sac has an oval form, and is more than six inches in its longer diameter; it is half full of laminated coagula. *Hunterian.*
1707. A section of a large mass of coagulum from an aneurismal sac, probably from that last described. It is irregularly laminated, and in various degrees discoloured. *Hunterian.*
1708. Another section of the same coagulum. At the back of the preparation is shown a separate firm clot of blood surrounded by the laminated coagula. *Hunterian.*
1709. Parts of a popliteal artery and of the sac of a popliteal aneurism. The artery above the sac is a little larger than is natural, and its internal surface is wrinkled, and very slightly tuberculated. At the margin of the sac the inner and, probably, also the middle coat of the artery presents an abrupt well-defined border, as if they had been destroyed by ulceration. Below the sac the artery is nearly obliterated: a black bristle is passed through its remaining canal. *Hunterian.*
1710. Part of an aneurismal sac filled with layers of fibrinous coagulum. The description in the MS. Catalogue was "Coagulum of an Aneurism operated upon at St. George's Hospital with success;" but there is no evidence whether the operation were that of removing the aneurismal sac, or whether the artery were tied, and the patient lived long enough to speak of a successful result. *Hunterian.*
1711. A section of coagulum from the sac of the same aneurism. *Hunterian.*

1712. Part of a popliteal artery. A bristle is passed through an orifice by which the artery is said to have communicated with an aneurismal sac. The popliteal vein is nearly obliterated. *Hunterian.*

9. *Contractions and Obliterations of Arteries by the effects of Disease.*

1713. Parts of a femoral and popliteal artery and vein. The lower part of the artery is completely closed, and in nearly two inches of its length is contracted into a solid cord. Above this part, the canal, for two inches, is full of firm dark coagulum; still higher up the artery is pervious, but its inner coat is thickened and corrugated, and has fatty deposits beneath its surface. The vein is healthy, but appears small.

It was believed that there was an aneurism of the popliteal artery eleven years before death, and that it had undergone a spontaneous cure by the sac becoming full of coagulum.

From the Museum of John Howship, Esq.

1714. Part of a femoral artery, from a woman who died with mortification of the lower extremity. The last inch of the artery, which was enclosed in the mortified part, contains only a thin film of fibrine, forming part of a tube; its walls are thin, and earthy matter is deposited in them. The rest of the artery is nearly full of firm, cylindriciform, and irregularly laminated coagulum. Its internal coat is remarkably corrugated, all the larger and deeper wrinkles having a transverse direction: it is also yellowish, and has a dry horny aspect. *Hunterian.*

- 1714A. The femoral, popliteal, and anterior tibial arteries, together with the anterior tibial vein, of a man who had dry gangrene of the foot. Just below the division of the common femoral artery, the trunk of the superficial femoral appears contracted, and its calibre is further diminished by thickening of its internal coat. The internal coat of the rest of the artery, thickened in a less degree, is partially reflected: that part of the artery which lay in and near the sheath of the triceps muscle is nearly

filled with dense fibrinous coagulum, but not quite impervious. The upper part of the anterior tibial artery is filled with soft fibrinous coagulum, and, in the rest of its length, is impervious, and like a ligamentous cord.

The patient was an intemperate man, fifty-two years old. Severe pain, redness, and swelling of the great toe commenced more than a month before death; a small black spot appeared, which gradually extended, and the foot became black, dry, and shrivelled. The case is recorded in Mr. Crisp's Treatise, p. 64.

Presented by Edwards Crisp, Esq.

1715. Part of a large artery, the canal of which is in part of its course contracted to half its natural diameter by the growth of an irregular mass of bone, in which it is imbedded. At the compressed part, and just below it, there are deposits of soft substance between the arterial coats.

Hunterian.

1716. "Obliteration of the lower part of the iliacs, &c., of a deer, from the East Indies."—*Hunterian MS. Catalogue.*

10. *Tumours in, or involving, Arteries.*

1717. Part of the arch of an aorta, between the coats of which an oval tumour, an inch in length, and nearly half an inch in thickness, has been formed. The internal surface of the artery is tuberculated.

From the Museum of Joseph Swan, Esq.

1718. Part of a left groin, in which a large and deep cancerous ulcer has destroyed a portion of the coats of the femoral artery, laying open its cavity, and occasioning fatal hemorrhage. Portions of whalebone are passed through the opening in the artery.

In the catalogue of Mr. Howship's Museum it is said that this ulcer exhibits the characters of chimney-sweeper's cancer: perhaps this implies that the patient had that form of cancer of the scrotum.

From the Museum of John Howship, Esq.

References to the specimens of Diseases of the Arteries in other parts of the Museum, and to the specimens, in this Series, which illustrate other facts relating to diseases of the arteries besides those that are indicated by the titles of the sections in which the specimens are, severally, placed :—

Wounds and Injuries by external Violence :—

Of the Aorta, 1565, 1566.

- „ Carotid, 1574.
- „ Iliac Arteries, 1567.
- „ Femoral, 1568, 1569, 1573.
- „ Popliteal, 1571, 1575.
- „ Brachial, 1570.
- „ Umbilical, 1576, 1577.

Ligatures applied on the Aorta, 1589.

- „ „ Common Carotid Artery, 1580, 1591 to 1595.
- „ „ Subclavian, 1695, 1696.
- „ „ Vertebral, 1592 to 1595.
- „ „ Common Iliac, 1584A.
- „ „ Internal Iliac, 1596.
- „ „ External Iliac, 1585.
- „ „ Femoral, 11, 1579, 1582, 1583, 1584, 1586, 1587, 1588, 1590, 1730, 2821, 2827.

Effusion of lymph within Arteries, 1582, 1714A.

General thickening and induration of the Coats, 1586, 1588, 1601, 1624, &c.

Thickening of the internal coat, 1634, 1636; and most of the specimens of Aneurism.

Deposits of fatty or atheromatous matter, 1517, 1565, 1572; and in many dilatations and aneurismal sacs.

- „ earthy matter, 1521, 1541, 1543, 1572A; and in many dilatations and aneurismal sacs of the aorta.

Morbid deposits in the Arteries of the Brain, 2092, 2093, 2095.

- „ „ Aorta, 1541, 1543, 1565, 1572, 1572A, 1602 to 1606, 1608 to 1620A, 1661, 1664, 1667, 3457, 3458, 3459, 3460.
- „ „ Coronary Arteries, 1517, 1521, 1624.
- „ „ Arteries of the head and upper extremities and their branches, 1616, 2811, 2812, 3460.
- „ „ Arteries of the lower extremities, 1597 to 1601, 1607, 1613, 1614, 1619, 1628, 1631, 1632, 1633, 1733A, 3458, 3460.

General Dilatation of Arteries :—

Supplying hypertrophied parts, 1497, 1500, 1503, 1504.

Maintaining Collateral Circulation, 1591 to 1596, 3472, 3474, 3475A.

Partial dilatation (Aneurism) :—

The sac formed by dilatation and growth of the whole circumference of a portion of an Artery (Aneurismal Dilatation), 1572, 1617.

The sac formed by dilatation and growth of part of the circumference of an Artery :—

With integrity of all the coats (True Aneurism), 1636-7-8, 1641, 1643-4-5, &c.

With partial destruction of the coats (False Aneurism), 1570, 1647, 1652, 1709.

With loss of the outer, and protrusion of the inner coat (Hernial Aneurism), 1642.

The sac formed of the coats of the Artery separated by blood effused between them (Dissecting Aneurism), 1572, 1572A.

Diffused Aneurism : blood effused from an Artery and confined by the surrounding tissues, 1571.

Progress of Aneurisms :—

Deposit of laminated coagulum in the sac, 337 to 340, 1641, 1646, 1648, 1649, 1653, 1657, 1687-8, &c.

Morbid deposits in the walls of the sac, 1635-6-7, 1639, 1641-2, &c.

Rupture or ulceration of the sac, 1636, 1646, 1649, 1650, 1651, 1653, 1657, 1663-4-5-6, 1673-4, 1677.

Effects of pressure on surrounding parts, 1648, 1652, 1655, 1656, 1657, 1658, 1669, 1674-5, 3462 to 3467, &c.

Effects of treatment, 1595-6.

Aneurisms of the arch of the Aorta, 1634, 1635, 1639, 1640 to 1644, 3461 to 3465.

„ „ Thoracic Aorta, 1646, 3466-7-8.

„ „ Abdominal Aorta, 1636, 1645, 3466-7-8.

„ „ Carotid and its branches,

„ „ Subclavian and axillary, and their branches,

„ „ Cerebral, 2094.

„ „ Iliac and their branches, 1596.

„ „ Femoral, 1637, 3469.

„ „ Popliteal, 1638, 3470-1-2-3.

Unusual smallness of Arteries, 3, 1542, 1548.

Ulceration and sloughing, 1157, 1560.

„ after ligatures, 1587 to 1590.

Obliteration or contraction of Arteries in consequence of disease, 141, 329, 330, 334-5-6, 710, 1614, 1673, 1681, 1683, 1689, 2095, 2822, 3474-5-5A.

Tumours in or involving Arteries, 229, 230, 1473, 1584A.

SERIES XXXVI.—INJURIES AND DISEASES OF THE VEINS.

1. *Enlargement and Dilatation.*

1719. The veins of a testicle exceedingly tortuous and enlarged, so as to form, with their close-packed convolutions, a considerable tumour.

Hunterian.

1720. A dried portion of the jugular vein of an ass, from which blood had several times been drawn. On one side, probably that through which the punctures were made, its coats are distended into several round partial dilatations, like small aneurisms.

Hunterian.

1721. A similar preparation, but the dilatation is more considerable and more general, though not uniform.

Hunterian.

2. *Effects of Inflammation: Phlebitis.*

The following is copied from a paper in the "Medical and Philosophical Commentaries, by a Society in Edinburgh," vol. iii. p. 430. It was probably sent to the editor of the journal by Mr. Cruickshank, in 1775, nine years before Mr. Hunter's "Observations on the Inflammation of the Internal Coats of Veins" were read before the Society for the Improvement of Medical and Chirurgical Knowledge, and eighteen years before their publication in the first volume of the Transactions of that Society. This paper contains the substance of the opinions expressed in the Transactions, and some of the facts on which they were founded are here more fully detailed:—

"We formerly presented our readers with some ingenious observations by Mr. John Hunter of London, concerning the puerperal fever, and the inflammation of cavities in general; we have now the pleasure of being able to communicate to them his remarks on the inflammation of veins, which are in many respects connected with the observations before delivered.

"From the causes producing the inflammation of other cavities, from the disposition

in inflammation, when it has once laid hold of a cavity, to spread over the whole of it, and from the usual terminations of such inflammation, mentioned in the account of the inflammation of the peritoneum, Mr. Hunter also explains the many bad consequences which sometimes arise from bleeding in veins.

“ By some, the mischief has been supposed to arise from pricking a nerve; but nerves, Mr. Hunter maintains, must be pricked in many of the common operations of surgery, yet such serious consequences do not follow. Besides this, he further observes, that the nerves, which are liable to be wounded in bleeding, are small and unimportant.

“ Others have supposed that those troublesome symptoms, which are sometimes the consequences of blood-letting, have arisen from pricking a tendon, or its aponeurosis; but Mr. Hunter observes, that, unluckily for such physiologists, tendons, in other places, are often pricked and torn with very little inconvenience; even the tendo Achillis, the largest tendon in the body, is frequently broken, without any such symptoms as sometimes arise from blood-letting. Besides this, the accidents from bleeding happen as frequently when a person has been bled in a vein which has no tendon near it, as when there was reason to suspect that a tendon might be wounded. It as often happens that a swelled arm is the consequence of bleeding in the cephalic, or cephalic median vein, as of bleeding in the basilic, or basilic median.

“ But by a third set of physiologists, the constitution has been blamed; and the symptoms have been said to arise only in bad habits. But here also experience is on the opposite side, and a person who has before enjoyed the most perfect health is just as liable to the accidents from bleeding, as one of a weakened or crazy constitution. And it may even be observed, that, where such accidents have happened, the patient has been bled in the opposite arm, without any inconvenience.

“ From these considerations, then, Mr. Hunter was led to reject the opinions formerly entertained respecting the cause of such complaints. He was first led to propose another conjecture, chiefly from observing what happens to horses. It is no uncommon thing for ostlers, from an unnecessary or ill-judged care, to bleed them in the neck, even when in perfect health. In several cases of this nature, Mr. Hunter had observed that the neck swelled, and the animal died; he was led, therefore, to investigate the cause of the complaint by dissection. On accurate examination, he found that the cavity of the vein was inflamed, and that the inflammation had spread along its internal surface to the chest, sometimes even to the heart itself. Besides these appearances in horses, he had also, in the human subject, opened abscesses after blood-letting, which ran in the course of the large veins, and which seemed at least to be formed in their cavities. These observations led him to suspect that the internal surfaces of veins, like those of other cavities in the body, might, in certain circumstances, be inflamed.

“ From attentive examination of abscesses of the lungs, he found many appearances which served to confirm this supposition. There he often observed the internal surfaces of the veins, leading from such abscesses, not only in an inflamed state, but in many places suppurated; and he could even distinctly trace the progress and termination both of the inflammation and suppuration. He always found them extending along

the coats of the veins to some distance from the abscess all around. He had observed the same appearances also on examining the state of the veins in limbs, where a high degree of inflammation had taken place after amputation: and he was further persuaded, that the inflammation, in many cases, extended so rapidly, and to so great a distance from the stump, only in consequence of its having seized on the cavities of the veins.

“ After these observations Mr. Hunter had no longer any hesitation in giving it as his opinion, that the mischief which often arises from bleeding is owing to an inflammation of the cavity of the vein. But, besides these proofs, a case occurred to him at St. George’s Hospital, during the course of last winter, which, he thinks, puts this matter beyond all doubt. A man was brought into the hospital with an inflammation of his right arm, in consequence of his having been bled in the basilic vein; after he had continued in the house about eight days, he died suddenly. He was not Mr. Hunter’s patient, nor was the surgeon whose patient he was permitted to take off the arm, but Mr. Hunter begged to have the parts principally diseased. Accordingly the vein, with its neighbouring artery and nerve, and a considerable portion of the surrounding parts, were taken out, from the middle of the fore-arm to the axilla; these parts were immediately sent him; and, upon examination, he found, as he had suspected, the cavity of the vein inflamed; and this inflammation extended from the puncture which had been made by the lancet in blood-letting, as high as the axilla; it went also some way downwards below the puncture. About the middle of the arm, the vein had suppurated; and, from the ulceration or absorption of parts which attends abscesses, the vein was divided into two, and each extremity, like the internal surface of the abscess, was irregular and jagged.

“ The orifice where the lancet had been introduced was yet open, and a probe could easily be made to pass through it; but the coats of the vein were very much thickened, and its internal surface, for some space, both above and below the orifice, was so covered with coagulable lymph, that the cavity there was impervious to the circulating blood; and in some places there was a perfect adhesion. Some of the branches of the vein were also plugged up by the lymph being coagulated; even the coats of the artery were affected, in consequence of its vicinity to the diseased part.

“ There was a free passage from the cavity of the abscess into the axillary vein, and Mr. Hunter suspected that the cause of the patient’s sudden death might be owing to some accidental change in the position of the arm, by which the purulent matter would be mixed with the reflux blood, and immediately carried to the heart. This conjecture, Mr. Hunter thinks, is confirmed by some experiments which he formerly made on dogs. He found that they were killed even by a few drops of milk being injected into their veins; and a small quantity of pus, when injected into the veins of a pregnant bitch, although it did not kill the animal, made her miscarry.

“ In the dissections of the horses, which were formerly mentioned, Mr. Hunter had traced the inflammation to the heart itself; and to this he had ascribed the death. But, in the case related above, the inflammation had stopped before reaching the axillary vein, so that the death must have been owing to some other cause.

“ In some cases it happens that, after an inflammation has run along the cavity of

a vein for its whole length, the coats of the vein unite at different places. This adhesion prevents the farther progress of the inflammation in these cases; but the intermediate spaces go into suppuration, and form distinct abscesses. In this manner, Mr. Hunter observes, that he has had occasion to open a chain of abscesses, in the course of the vena saphena, from the top of the foot all the way to the groin; and there the inflammation arose from a wound on the top of the foot, by which he thinks it probable that the cavity of the vein had been exposed.

“ Mr. Hunter is disposed to think, that the principal cause producing the inflammation of a vein, after bleeding, is the want of disposition to heal. This may at first arise either from its being exposed, or in consequence of the lips of the orifice in the skin not being properly brought together. If an injury be done to one part of a cavity, the stimulus, which arises from its being an imperfect cavity, goes through the whole. Hence it inflames and suppurates. In order to prevent mischief, Mr. Hunter advises, that the orifice should be closed as accurately as possible; and he recommends that the orifice in the skin should be drawn to one side of that in the vein, so as to make the skin do the office of a valve to the venal orifice.

“ He finds that, where inflammation has attacked the cavity of a vein in consequence of blood-letting, the sides of the vein sometimes adhere, and thus the inflammation is prevented from spreading farther. But the cavity of the vein at that place is for ever obliterated; and from this circumstance he accounts for surgeons being so often disappointed in attempting to fetch blood from a vein that has often been struck before.”

1722. The veins of an arm, exhibiting some of the effects of phlebitis after venesection. The cephalic vein (on the right hand side of the preparation) is distended through nearly its whole length by a firm clot of blood, which at the upper part becomes smaller, and tapers to a narrow flat band, which adheres firmly by one of its surfaces to the adjacent wall of the vein. The walls of the vein, laid open at this and at the lower part, appear healthy, but, in the intermediate portion, thick and tough. The median-cephalic and median-basilic veins, and the lower part of the basilic vein, are similarly filled with firm round clots. The upper part of the basilic vein is pervious, but its inner coat is discoloured, being, probably, blood-stained.

There can be little doubt that the following is the history of the case:—

“ Inflammation of the Arm after Bleeding.

“ Mr. ———, wheelwright, Edgeware-road, received a blow on the right side of the nose and cheek, which stunned him, but he soon recovered of the immediate effects of the blow.

“ He was bled, &c., but the orifice in the arm opened, and he bled again. An

inflammation came on in the arm, which was very severe, and a suppuration at the orifice took place. He was taken with stupor, sleepiness, and sickness at the stomach. The question was, whether these symptoms were owing to the blow or the arm. I was of opinion they belonged to the blow, and that there was a slow extravasation of blood in the brain somewhere; for he had recovered of the concussion, and it was too early for suppuration. He continued in this way for eleven days, but we thought he was rather better: however, on the twelfth day, he was taken with a most violent shivering fit; cold as possible, after which he became hot, and a profuse sweat came on, but he remained all that day very low, and debilitated, and his arm had less of the florid red. We now began to entertain but a bad opinion of him, and suspected mischief of the suppurative kind in the brain; but next day (the thirteenth day) he was considerably better, which dissipated our fears; on the fourteenth day still better. But on the fifteenth he was taken in some degree comatose, lost the power of speech, and in a day or two he died.

“On opening the head we found bloody water in the ventricles. And on examining the veins of the arm, I found the cephalic vein obliterated as high as the deltoid muscle, and some way down the arm: the cephalic median, as also the basilic median, were obliterated; likewise the basilic, some way down the arm; and the brachial artery was obliterated nearly as high as the axilla.

“These obliterations were formed by the blood coagulating and adhering to the insides of the veins.”—*Hunterian MSS., Cases and Dissections.*”

1723. Part of the jugular vein of an ass, completely filled with a coagulum, which was, probably, formed in phlebitis. The coagulum fitted closely to the surface of the vein, and bears the impressions of the valves: its outer part is very smooth, and to some depth is laminated; its interior appears softer and more uniform. The coats of the vein are not obviously diseased, though deeply coloured, probably by imbibition of the colouring matter of the blood. *Hunterian.*

1724. Part of a vein, on the inner surface of which a small quantity of lymph is deposited, near an orifice which, it is probable, remained after a wound in venesection. *Hunterian.*

1725. Part of a vein, with small thin shreds of lymph deposited upon its inner surface. The internal coat of the vein is deeply wrinkled longitudinally; and its other coats, as well as the tissues around it, are thickened and consolidated. *Hunterian.*

1726. Another portion of vein from the same person, exhibiting similar appearances. Part of its cavity is nearly full of lymph. The inflammation of the vein is stated, in the Hunterian MS. Catalogue, to have been the result of its "being wounded and exposed." *Hunterian.*

1727. Part of the jugular vein of an ass, the cavity of which is in many places obliterated, and in the intervening spaces is filled with masses of pale coagula of blood, or lymph. All the tissues, for some distance around the vein, are thickened and consolidated; so that the outline of the section of its coats cannot be distinguished. Its cavity is, also, contracted to less than half the size of that of the healthy jugular vein of an ass.

Hunterian.

1728. The veins of an arm, exhibiting the effects of acute inflammation.

They are described in the following passage from Mr. Hunter's "Observations on the Inflammation of the internal coats of Veins," in the "Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge," vol. i. London, 1793; reprinted in the third volume of his "Works," p. 583.

"Upon examining the arm of a man who had died at St. George's Hospital, I found the veins, both below and above the orifice, in many places united by the adhesive inflammation. I also found in many parts of the veins that suppuration had begun, as we find, on an inflamed surface, but had not yet arrived at ulceration; and in several other places ulceration had taken place, so as to destroy that surface next the skin, and a circumscribed abscess was formed. The vein near to the axilla had taken on suppuration, beyond which adhesions had not formed; and this had given a free passage for the matter into the circulation, of which most probably the patient died."

A further account of the case is given in the extract from the "Medical Commentaries." See p. 279.

1729. A femoral vein, exhibiting the effects of acute inflammation after amputation of the thigh. Its cavity was full of pus; lymph and small clots of blood are attached to its inner surface, which has lost its natural polish, and is irregularly elevated, wrinkled, and, at the lower part, somewhat granular; the other coats are thickened and consolidated. About the middle and at the lower part of the vein there are remains of pairs of valves, which appear to have been almost wholly removed.

Presented by Sir William Blizard.

1730. Parts of a femoral artery and vein from a stump. The cavities of both contained pus. At the lower end of the artery, round which the ligature remains attached, a small clot of blood adheres closely to its walls: its coats appear healthy. On the internal surface of the vein there are several thin narrow strips of adherent lymph, and at the lower part it is wrinkled and rough.

From a patient who died about ten days after his leg was amputated for malignant disease.

Presented by Joseph Swan, Esq.

1731. A portion of the integuments of an arm, and of one of the cutaneous veins. A bristle is passed through a small aperture in the coats of the vein, the remains of a wound made in bleeding. The vein is healthy, but the tissues around it are hardened and consolidated; and over it is part of a large open cavity formed by suppuration of the subcutaneous cellular tissue.

The patient died from the effects of the inflammation of the subcutaneous tissue: there was no appearance of phlebitis.

From the Museum of Sir A. P. Cooper.

1732. Parts of the left iliac and femoral arteries and veins of a nobleman. The arteries are externally healthy. The whole length of the left external iliac vein is obliterated and contracted, and its coats are slightly thickened and indurated. In its interior there is an appearance of the coagulum of blood, by which it was probably at first obstructed, and which has now lost its colour, and become firm, and completely adherent to the inner surface of the vein; though not so adherent but that a portion of the wall of the vein has been removed from it, showing its distinct outline. The veins below the obliterated part are dilated, and in a slight degree varicose; those above it are healthy.

From the Museum of Sir A. P. Cooper.

1733. The right iliac veins of the same patient, dried, with the surrounding parts. Parts of them appear to have been completely obstructed with clots in which bone-like matter has been formed.

From the Museum of Sir A. P. Cooper.

- 1733A. Part of the left femoral artery of the same patient. Its inner coat is wrinkled and deeply seamed, and appears spotted with yellowish deposits.

From the Museum of Sir A. P. Cooper.

The case of the patient from whom the last three preparations were taken was read at the College of Physicians by Sir Henry Halford, in an Essay "On Phlegmasia Dolens in the Male," and was published in the "London Medical Gazette," vol. x., p. 171. London, May 5, 1832:—

"The Earl of Liverpool had a swelling of the left leg and thigh, with a varicose state of the veins from the ankle to the groin, for several years before his death. The symptoms were palliated from time to time; but the obstruction to the circulation of the blood appeared to Sir H. Halford to be the prime cause of a disease of the brain, under which the patient laboured for some time before he died. He had imperfection of the sight, and died with apoplexy; and four ounces of serous fluid were found effused in an unnatural cavity in the brain. His pulse used to beat only 44 times in the minute."

1734. Part of a vein, the cavity of which is in one situation filled with a coagulum of blood an inch long, and with small portions of earthy matter imbedded in it. In other situations lymph, or clot of blood, is deposited in a thin uneven layer upon the inner surface of the vein. The coats of the vein appear thickened and wrinkled.

Hunterian.

1735. The veins of a leg. They are dilated and tortuously elongated; and their walls, probably in consequence of slight phlebitis, are thickened, indurated, and, probably, inelastic. Their cavities are exposed in two places, to exhibit coagula formed within them. In one situation a long coagulum completely fills the cavity of the vein; in another it lies in a thin layer upon its surface.

Hunterian.

1736. The veins of a leg, dilated, elongated, and very tortuous. Their coats, like those of the preceding specimen, and probably from the like cause, are thickened and laminated. One of the veins, which is laid open, has lymph deposited in a thin layer upon a small part of its inner surface, and at its upper part a widely dilated portion is filled with a large clot of blood. The valves also in this vein are shrivelled and contracted;

and they are so few, that it is probable some of them have been removed by disease. The integuments, of which a small portion is preserved, appear hardened; and the veins are closely united to them.

Hunterian.

3. *Morbid State of Veins in connection with Malignant and other Tumours.*

1737. Portion of a tumour from the abdomen of a horse, with part of a large adjacent vein. The cavity of the vein is filled by a clot of blood, the external part of which appears to have been formed in concentric layers; it is in many places intimately adherent to the inner surface of the vein. The coats of the vein appear healthy.

Hunterian.

1738. An aorta, and vena cava inferior, with the common iliac vessels. They are surrounded by lymphatic glands, enlarged and filled with some morbid, probably malignant, substance. The aorta, in which a portion of dark glass is placed, is of unusually small size, in comparison with the vena cava. The veins are filled and distended with a large, branched, solid coagulum, the exterior of which forms a distinct thin layer, from which, in the upper half of the vein, the central, softer, and more uniform substance has been removed. The outer surface of the coagulum was in close contact with the interior of the vein; in a part of their extent they have been separated. The coats of the vein appear healthy.

1739. Iliac veins, from a patient who died with tuberculous disease of the testicles, vesiculæ seminales, and prostate gland, of which a specimen is preserved in No. 2423. The internal iliac veins are filled with an irregular mass of grumous, partly laminated, and softened coagulum; their coats, as well as those of the external and common iliac veins, appear healthy.

From the Museum of Sir A. P. Cooper.

1740. Part of a femoral vein, the canal of which is filled with an irregular gru-

mous clot of fibrine, mixed with medullary matter, in some situations closely adherent to its walls. The adjacent branches of the femoral artery are healthy.

From a man, forty-two years old, who had an extensive malignant ulcer in the groin, from which repeated hemorrhages took place. This part of the vein lay beneath the ulcer.

From the Museum of Robert Liston, Esq.

1741. Portions of the arch of an aorta, with its large branches, and of the left internal jugular vein and pneumogastric nerve, surrounded by a pale firm tumour. The vein is obliterated by the pressure, and by a clot which formed within the compressed part, and is intimately united to its internal surface.

Hunterian.

4. *Earthy concretions: Phlebolithes.*

1742. A portion of vein, in which three small round decolorized coagula of blood are attached by slender pedicles to the walls. One of them, being in progress towards the formation of a phlebolithe, has earthy matter deposited in it. The vein is dilated at the part in which the coagula are situated, but its coats appear healthy.

Hunterian.

1743. Several small round phlebolithes, marked "From peritoneal veins, human." One of them is elongated, and a small conical portion of dried blood is attached to its extremity, indicating that the earthy matter of which it is formed was deposited within a conical or spindle-shaped clot of blood.

Hunterian.

1744. Portions of two uterine veins, having small spherical phlebolithes within them.

From the Museum of George Langstaff, Esq.

1745. Two phlebolithes, from other uterine veins of the same patient as those last described.

From the Museum of George Langstaff, Esq.

1746. A portion of the venous plexus from the neck of a bladder, dried, with some of the connecting tissues, to show several phlebolithes of various sizes. *From the Museum of Sir A. P. Cooper.*

Specimens of Diseases of the Veins in other parts of the Museum :—

Varicose enlargement of Hemorrhoidal Veins, 1277 to 1284A, 1382.

„ Spermatic Veins, 1335, 1338, 1339, 2336, 2337, 2464, 2465.

Osseous and earthy deposits, 1438-9.

Ulceration, 1158.

Obstruction by Clots, 1581, 1582.

„ Tumours, 1472-3, 1564, 1566, 1648.

END OF VOL. III.







