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DESCRIPTIVE CATALOGUE

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OF THE

ANATOMICAL MUSEUM

OF THE

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

*W. C. C.*

BY

J. B. S. JACKSON, M. D.

CURATOR OF THE MUSEUM; PROF. OF PATHOLOGICAL ANATOMY  
IN HARVARD UNIVERSITY.

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## INTRODUCTION.

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THE BOSTON SOCIETY FOR MEDICAL IMPROVEMENT was founded in the year 1828, and has continued its meetings regularly, twice a month, to the present time. At these meetings an original paper is usually read by one of the members in turn ; and each one present is called upon to communicate, extemporaneously or in writing, any information or cases of interest that may have occurred to him during the interval of the meetings, or any case concerning which he may desire to have the opinion of the Society ; each member thus obtaining direct information in regard to most of the important cases that have occurred in the city or vicinity. These Proceedings are fully recorded by a Secretary, who is annually chosen ; and, the same course having been pursued from the first, they now amount to several volumes.

As the community is in general favorably disposed to the practice of post-mortem examinations, the reports of fatal cases are frequently accompanied by the diseased parts ; and hence the subject of Morbid Anatomy

has always received from the Society a large share of attention. From a selection of the specimens thus exhibited, the Cabinet of the Society has been mainly formed, and its peculiar and principal interest is due to the connection of the specimens, in most instances, with authentic histories of the cases from which they were derived. Some very important specimens, however, have been obtained from other sources; and the donations of Dr. Robert W. Hooper, one of our members, and of Prof. Nathan R. Smith, of Baltimore, deserve an especial notice. The collection of Chinese Paintings, presented by Dr. Hooper, with the nearly complete history of the cases that he has been able to obtain, form a rich series of illustrations, far more valuable than any preserved specimens of disease, and which nothing could equal but an examination of the patients themselves. The suite of casts presented by Prof. Smith is also a very important acquisition to the Cabinet of the Society; this donation was made at the suggestion of Dr. Joseph Roby, who now holds the Professorship of Anatomy at Baltimore as a colleague of Prof. S., but who, for many years before he left this city, was one of our most active members; the value of this collection, however, to the Society, would be much increased if accompanied with a history of the individual cases. There is also in the Cabinet a large collection of gunshot injuries of the bones, with some other specimens, which were presented several years since by Dr. S. D. Townsend, and were obtained mostly at the U. S. Marine

Hospital in Chelsea, during the war of 1812; many diseased bones, with some national skulls, have also been presented by Dr. Charles H. Stedman, who for some years held the office of physician at the same Hospital, the specimens in both of these collections being accompanied with their histories; some fine specimens of diseased bones, and several very beautiful anatomical preparations and models of disease were purchased by Dr. George C. Shattuck, Jr., when in Paris, and these have since been presented by him to the Society.

In the written Catalogue of the Cabinet, which is much more in detail than the present volume, the specimens are entered, described and numbered, in the order in which they are received, and the corresponding number is placed upon the specimens. There is also an index, in which each specimen is at the same time entered according to a scientific arrangement, very similar to the one here adopted.

The funds of the Society being very limited, those specimens only have been preserved, as a general rule, that were interesting in regard to the history of the case, or to some point of general or morbid anatomy, many of those which are exhibited at the meetings being excluded because of the frequency of their occurrence, and many others from a want of some means of preserving the anatomical appearances. The Cabinet, for example, does not contain a common case of tuberculous lung, and, on the other hand, when a carcinomatous testicle was recently added, it was in consideration of the age

of the subject, and not with any idea of showing the anatomical appearances of the disease, which were, as usual, almost entirely destroyed by the preservative liquid.

Several years ago, it was proposed to publish the Catalogue of the Cabinet, and the idea having been favorably received, the necessary funds were at once collected by private subscription amongst the members of the Society. The work could and should have been prepared at once, and an apology is due to the Society for the long delay that has ensued; but it is some compensation to know that the Cabinet contains many more specimens than it did when the publication was first thought of, as it is a source of regret to publish the Catalogue even now, when such constant accessions are being made. The collection is still small, but it is believed to contain, in proportion to its size, very many rare and valuable specimens. Some are regarded as new to science, whether in morbid or general anatomy, or as opposed to opinions generally received; but of this others will judge, who have more extended means of observation than we possess.

The division of monstrosities, and the cases of malformation, which are arranged under their especial heads, occupy, perhaps, more space in the Catalogue than some would think they deserved; but the subject is one that well repays the attention of the general anatomist; and the description of many of the specimens, however illustrated, must necessarily be much

detailed. Reference was constantly made, in the dissection of these specimens, to the work of M. Isidore Geoffroy St. Hilaire, which may be supposed to contain about all that is known upon the subject, and an attempt was made to follow his classification, but this was found to be impossible. His nomenclature might have been used in many cases, but as it could not always be strictly followed, it was thought best, in referring to the work, to mention the volume and page, and not trouble the reader with a name that would seldom convey any meaning, or not fail to be soon forgotten; one of his terms, however, as a solitary exception to the above remark, has been used in the index at the end of the volume.

About four years since, the library of Dr. George B. Doane, one of our earliest and most respected members, was, after his very sudden death, presented, by one of his family, to the Society, with his collection of instruments; the whole being contained in a handsome case, expressly provided for the purpose, and corresponding to those in which the anatomical specimens are displayed. This was an important acquisition, and one that had been long desired; the foundation of a library was at once laid, to which have since been added many valuable pathological and other works, and which has already proved highly useful to the members of the Society.

In regard to the general prospects of the Society, they were never better than at the present time. The

meetings are well attended and well sustained, and tend to the promotion of good feeling as well as of medical science. The Cabinet, the Library, and the Records of nearly twenty years, faithfully kept, now form a substantial basis. The same spirit that founded the Society, and has thus far actuated its members, still prevails, and, it is hoped, will perpetuate its existence, and render it for many years to come deserving of the significant name it bears.

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# CATALOGUE OF THE CABINET.

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## I. HEALTHY BONES.

### I. DEVELOPMENT.

- 1-5. A series of fœtal skeletons, from the third to the ninth month; in No. 4, there are thirteen ribs upon each side.
6. An entire set of separated fœtal bones; mounted, and displayed in a glass case. From Paris. *Dr. George C. Shattuck, Jr.*
7. Separated bones of the head of a seven months fœtus.
8. Longitudinal and transverse sections of the long bones of a mature fœtus, to show the central canal.
9. A collection of the bones of a child, consisting of an intermaxillary, several vertebræ in connexion, a scapula, humerus, radius, ulna, ischium and pubes, femur and tibia; the peculiarity in the seventh cervical vertebra is well shown.
10. The humerus, radius and ulna of a young adult.
11. Cranium of a child about eight years of age.

### II. ADULT BONES.

12. A skeleton, from Paris. *Dr. W. Channing.*

13. A cranium.
14. A very beautiful French preparation. The bones of the cranium are disarticulated, and mounted, so as to be seen separately and in relation. The bloodvessels and nerves are also represented, and the alveoli are cut away to show the teeth. *Dr. George C. Shattuck, Jr.*
15. A skull, from which the bones of the face have been removed.
16. Vault of the cranium.
17. A skull prepared in Paris; shows a longitudinal section, and a dissection of the internal ear. *Dr. Charles T. Jackson.*
18. A skull prepared, by a section through the bones of the face, to show the sinuses and their relations.
19. Sections, mostly longitudinal, of the dorsal, lumbar and sacral vertebræ, sternum, humerus, radius, ulna, upper and lower extremities of the femur, tibia, fibula, os innominatum and os calcis.

### III. EFFECTS OF OLD AGE.

20. Edentulous lower jaw, with others more or less so.
21. Edentulous upper jaw, the alveolar portion being at one part extremely thin.
22. Base of the skull, showing finely the change of the bone in case of senile atrophy, and contrasting well, in the lightness of its structure, with the last specimen; the alveoli here also are completely absorbed.

### IV. STRUCTURE.

23. Calcined bone.
24. Humerus and ulna of an adult, from which the earthy matter

was removed by an acid, and having been then steeped in a saturated solution of salt, they retain, on being dried, a certain degree of flexibility; the radius is also preserved in its natural condition. Prepared for the society by *Mr. James Blake*.

25. Portion of the humerus of an Albatross, from which the earthy matter has been removed; dried and varnished.
26. Portions of a bone and tooth of the American Mastodon, from which the earthy matter has been removed by an acid, and showing that nearly if not all of the animal matter remains; a wet specimen. For a full chemical analysis of the bones, teeth and tusks of the *Mastodon giganteum*, see Dr. C. T. Jackson's article in the Boston Journal of Natural History, (Vol. V. No. iii. 1847.)
27. Portion of the femur of an Ox, to show the lamellated structure of bone.

#### V. ANATOMICAL VARIETIES.

28. Skull of an adult, showing a persistence of the frontal suture.
29. Ossa Wormiana.
30. A portion of the skull removed, to show a Wormian bone, equal to about two inches in diameter, of a somewhat triangular form, and situated at the junction of the occipital and frontal bones. From a young lady, aged sixteen, who died of extensive apoplexy, with softening of the brain.
31. Part of the skull of an old person, showing an enlargement of the frontal sinuses.
32. Opening of considerable size between the spinous processes of the lumbar and sacral vertebræ.
33. Sacrum open posteriorly, almost throughout.
34. Bifurcation of a rib anteriorly.

35. Episternal bones. The whole sternum is preserved, and upon its upper edge, posteriorly, are situated two symmetrical bones, one on each side of the median line, and about the size of large orange seeds; the mode of connexion with the sternum was not ascertained, the bone having been found in a heap of others in the dissecting room. Since the above, Dr. H. has met with a second specimen — April, 1841.

*Dr. O. W. Holmes.*

36. A hole in the middle of the sternum, between the fourth and fifth ribs, of an oval form and three-fourths of an inch in length.
37. A perforation in the sternum, situated as in the last specimen, but not larger than a goose quill.
38. A scapula, showing a foramen instead of the supra-scapular notch.

#### VI. NATIONAL SKULLS.

The internal capacity of each specimen will be given in cubic inches, and to estimate this, the cavity of the cranium was filled with shot, ten to an inch, and these, having been well rammed down, were poured off and measured in a metre which was very accurately graduated for the purpose by

*Dr. N. B. Shurtleff.*

39. Skull from a church in the Island of Scio; several extensive sabre wounds are seen, the individual having undoubtedly been massacred at the time of the insurrection in 1822. Int. cap. 76 in. This and the two next specimens were brought home by *Capt. William D. Phelps*, and presented to the Society by *Dr. N. B. Shurtleff.*
40. Skull of a Maltese. The cranial portion is elongated, depressed, and remarkable for its uniformity and want of character. Int. cap. 83 inches.
41. A second skull from the Island of Malta, but taken from a

place where the French soldiers only were buried. The cranium is capacious, broad and elevated, the length being diminished in proportion; posteriorly the development is very marked; sutures much obliterated. The face is not proportionally large, and the alveoli are particularly shallow. Int. cap. 85 inches.

42. An Egyptian cranium; well formed; face rather flat; int. cap. 95 cub. in. The greater part of the skeleton is also preserved, the bones of the pelvis having been cemented together. This is one of several specimens which were sent to this country by the late *John Lowell, Esq.*, and was presented to the Society by his brother, *Mr. F. C. Lowell*; when received it was wrapped in bandages, and enclosed in a sarcophagus.

43-4. Two Theban skulls, the capacity of the first being 95 cubic inches, and of the second 84½. In the first, the parietal protuberances are very prominent, as in the Sandwich Island crania, with some other resemblances; there is also persistence of the frontal suture.

*Rev. Theodore Parker.*

45. Skull from the river Ganges; int. cap. 80½ in.; incisor teeth filed.

*Dr. D. H. Storer.*

46-8. Three skulls, from the river Ganges, presented by *Dr. Francis G. Minot*; int. cap. of the first and second 95 in., and of the third 76½ in. In the first two there is a very marked, shelving projection of the alveoli, and a very remarkable want of symmetry in the form of the whole posterior portion of the cranium, the right side being prominent in the first specimen, and the left depressed, whilst in the second the reverse is the case. In the third the occiput is very protuberant, as it is also in the first, but the other characters above noticed are wanting.

49. A Chinese skull, with the cervical vertebræ attached; some of the flesh remains, dried on, and with it the long, plaited hair. The individual to whom this skull belonged, having been engaged with two others in smuggling opium, they were all three decapitated, and their heads were placed conspicuously

in separate cages near the bank of the river between Macao and Canton. There they remained until at last a descent was made upon them in the night, and they were carried off; one was sent to London, and the present specimen, having been brought home by *Capt. George Kilham*, of this city, was given to *Dr. Paul Simpson*, and by him presented to the Society.

- 50-1. Two Chinese skulls, brought from Macao, and presented by *Dr. M. S. Perry*. The int. cap. of the first is  $69\frac{1}{2}$  inches, and of the second  $63\frac{1}{2}$  inches, the second being that of a child about five years of age; in the first there is the longitudinal ridge from the frontal bone to the vertex, as observed in the Mongols.
52. Skull of a Celebes Islander; teeth filed and blackened; int. cap. 92 in. *Dr. C. H. Stedman*.
- 53-8. Skulls from the Sandwich Islands. Int. cap. of No. 53, 86 in.; of No. 55,  $88\frac{1}{2}$  in.; of No. 56,  $85\frac{1}{2}$  in.; of No. 57,  $90\frac{1}{2}$  in., and of No. 58, 83 in. Several of these specimens are characterized by the width and symmetry of form of the upper portion posteriorly, and by the prominence of the parietal protuberances, though one of them (No. 57) forms a remarkable exception. The palatine fossa is generally short. In one (No. 56) the temporal and frontal bones meet upon the right side, though not upon the left, and in this specimen and one other there are seen Wormian bones, which are said to be rarely observed in the savage races. No. 53 was presented by *Dr. D. H. Storer*; No. 54, by *Dr. C. H. Stedman*; Nos. 55, 56, 57, by *Dr. Alexander Thomas*; and No. 58 by *Dr. S. D. Townsend*. This last specimen was brought from the Island of Oahu by *Dr. J. H. Lyman*, of Northampton, and was sent to Dr. T. with a full and interesting account of the circumstances under which it was found. It was far within a cave near the top of a volcanic mountain; and with it were found great numbers of other bones. Some suppose that the place had been used as a cemetery; but others, that in former times the natives had been besieged in the cave by their enemies and starved to death.

59. Skull of a negro, from the Western coast of Africa; presented by *Dr. Stedman*. The parietal protuberances are marked, very much as in the Sandwich Island skulls. The lower half of the face is also prominent, and the angle of the lower jaw is obtuse. The temporal and frontal bones meet on the right side, and very nearly so on the left. Int. cap. 95 in.
60. Skull of a negro; this specimen is quite remarkable for the elongated and depressed form of the cranium, the projection of the alveoli, the obtuse angle of the lower jaw, and the nipped and slender appearance of the nasal bones; one small Wormian bone is seen in the temporal suture, there being two in the lambdoidal in the last specimen. Int. cap. 78 in.  
*Dr. C. H. Stedman.*
61. An African skull, beautifully prepared, and sent from Bahia, South America, by *Gideon T. Snow, Esq.*, formerly of this city; presented to the Society by the late *Dr. J. C. Howard*. This skull is massive and heavy, and has all the prominences and irregularities strongly developed, with great breadth between the orbits, a downward and forward projection of the malar bones, and a protrusion of the alveoli, the characteristics of brute force being strongly marked. Int. cap. 89 in. The broad and rounded form of the nasal opening, which belongs to the negro race, is marked in this skull, but still more so in No. 107. The following is an extract from a letter which accompanied this specimen: The individual "was a genuine African, of the Nago tribe, esteemed above all other blacks for their tall stature, breadth of shoulders, symmetry and strength of limb, united to an intelligence not usually found among the blacks of other tribes. This was the tribe which revolted here last January (1835,) and this was one of the chiefs in the affair. He was killed after a most desperate contest, the courage of this tribe being fully equal to their Herculean strength."
62. Cranium of a Gay-head Indian (Martha's Vineyard.) The subject stated that he was full-blooded, fifty-six years of age, and had had no education; died of consumption. The jaws are quite prominent, as in the negro, the two races being much

intermixed in this tribe; palate deep and narrow; angle of lower jaw well marked; sutures much obliterated, and upon the top of the head some appearance of a ridge, as in the Mongols; int. cap. 87 in. *Dr. C. H. Stedman.*

63. Indian skull, from Martha's Vineyard, and much better characterized than the last specimen. A most remarkable Wormian bone is seen in place of the upper portion of the occiput, and equal to at least two and a half inches in extent. Int. cap. 81 in.; being rather frail, this skull was measured with white pepper. *Dr. C. T. Jackson.*
64. Skull of a Monhegan Indian, from Tappan's Island, Damariscotta River, Maine; formerly a celebrated burial-place, but not used for the last two hundred years. Well characterized; int. cap. 75 in. *Dr. C. T. Jackson.*
65. Skull of a Penobscot Indian; occiput quite prominent and sutures much obliterated. Int. cap. 79 in. *Dr. C. H. Stedman.*
66. Skull of one of the Uncas tribe of Indians, Connecticut. *Dr. C. H. Stedman.*
67. Portions of skulls dug up in the North part of this city, and supposed to be of Indian origin. *Dr. H. G. Clark.*
- 68-9. Two Skulls, from the Columbia river; in their general aspect they resemble the figure of the Kalapooyah in Dr. Morton's *Crania Americana*, (pl. 47.) Int. cap. of the first, 80 in., and of the second, 89½ in. These two specimens were procured by *Mr. Phineas S. Davis*, of this city. Mr. D. states that, in the year 1842, he spent four months at the river, and obtained these two skulls and one other at Coffin Island; this island is upon the river, about eighty miles from its mouth, and, though nothing more than a small rock, is a favorite burying place with the natives. There were about fifteen coffins upon the island, but the three skulls which he brought away were all that he saw. These coffins, so called, are their common canoes, in which the body is covered up, and placed,

sometimes upon the ground, sometimes on the side of a hill, with one end resting upon a tree, and sometimes supported upon poles, their bracelets and other ornaments being buried with them. With regard to the flattening of the head, Mr. D. says that it is commenced when the infant is a few months old, and is continued for a year, more or less, the child being bound to a board, with a piece of bark, or something of the kind, to press upon the forehead. He never saw but one child under the process, and that one did not appear to suffer from it; he had, however, seen many young children after the completion of the process, and the deformity was generally greater in them than in the adults; he also observed that the form of the head before the process was begun, was not at all remarkable.

70. Cast, in plaster, of a Carib head. *Dr. William E. Coale.*
- 71-2. Two well formed skulls, brought from the coast of California, by *Capt. William D. Phelps*, of this city, and presented by *Dr. N. B. Shurtleff*. No. 71 is thick and heavy, with long styloid processes, and very large nasal bones. In both, the palatine fossa is short, deep and narrow. Int. cap. of No. 71,  $75\frac{1}{2}$  in., and of No. 72,  $77\frac{1}{2}$  in. No. 72, seems to have been shot through the back of the head and left orbit.
73. Peruvian skull, of the Inca race; flattened posteriorly, but symmetrical. *Dr. C. T. Jackson.*
74. A second specimen; in this skull there is not merely the flattening posteriorly, but the want of symmetry which is so characteristic of this race, and to a most remarkable degree, the prominence being on the right side; several Wormian bones are seen about the lambdoidal suture. Int. cap.  $76\frac{1}{2}$  in. *Dr. S. D. Townsend.*
75. A third specimen, brought from the "Temple of the Sun." Some of the soft parts remain, dried on, and a large quantity of soft auburn hair, being partially detached, has been removed and placed in a jar by the side of the skull. The subject was a child four or five years old. Int. cap.  $59\frac{1}{2}$  in. In this specimen there are three upper incisor teeth upon the right side;

the additional one was between the two others, and in the same range, but smaller in size, so far as can be judged by the sockets, for the teeth themselves have fallen out.

*Dr. H. A. Ward.*

76. Skull of an ancient Peruvian, characterized as usual by the elongated form, the flattening of the frontal portion, and the rounded development of the posterior and upper portions. Int. cap.  $70\frac{1}{2}$  in.

*Dr. Winslow Lewis.*

## II. DISEASED BONES.

### I. SKELETON.

77. Skeleton of a little girl, eight years of age, who was affected with rickets, and was also said to have been idiotic. Cranium sufficiently well formed. The whole spine is curved somewhat backwards, but not laterally, and the acetabula are pushed in, so as to encroach upon the cavity of the pelvis. All of the long bones are more or less curved, some greatly so, and none more than the femurs, of which the left has been broken and well united. The whole skeleton is very light, and in the recent state appeared to possess a cartilaginous elasticity.

*Dr. George Parkman.*

### II. HEAD.

78. The top of the cranium, showing the effects of a severe burn which occurred in infancy; the patient was forty-two years of age, and died from a tuberculous disease of the spinal marrow (Vid. specimen.) The right parietal bone, to a considerable extent, is rough on the surface, and more or less thin, with a perforation about two-thirds of an inch in diameter. The patient was bald on that side of his head, the scalp in a cicatrized state, and directly over the diseased bone was an extensive scab, which, according to his report, had always been there, and was very tender.

79. Cranium of a Mink, showing a caries of the anterior portion of the lower jaw.

80. Cranium of a Skunk, showing the same as the above.

*Dr. Winslow Lewis.*

81. A small glass jar, containing several bones of a Skunk. The lower jaw, which on one side is enlarged anteriorly and carious; two of the caudal vertebræ, and the lower extremity of one of the tibiæ have a considerable quantity of new bone thrown out on the surface, and two of the metatarsal bones are firmly ankylosed. A carious femur from another subject is also shown.

*Dr. Jeffries Wyman.*

82. Necrosis of the greater part of the body of the lower jaw, including that portion of the alveolar processes which contains the incisor teeth. Several openings exist on the surface, through which the old bone is seen within, a part of it being already loose. This was the result of a blow; the patient was a sailor, and died, ten months after the accident, from acute pneumonia.

*Dr. C. H. Stedman.*

83. Recovery from gangrenopsis, after the exfoliation of a large portion of the upper maxillary bone, and a portion of the lower maxillary in front, the crowns of one molar and two incisor teeth of the second set having also been thrown off; the bones and teeth are shown. From a little girl, four years of age. May 3d, 1832, she was attacked with severe cerebral symptoms. On the 9th, a swelling appeared on the outside of the left cheek, red, tense and shining, and very soon afterwards a gangrenous spot was seen on the centre of the inside of the cheek, with a separation of the gum from the upper jaw; her aspect was very bad, and the vomiting and cerebral symptoms continued, with alternate restlessness and coma; the skin was cool. She had taken mercury, but the mouth had not been affected. This state continued for two or three days, when the gangrene began to extend along the upper and lower jaw. On the 18th, the cheek was hard, falling in on the outside, the skin only having escaped the destructive process; slough separating from the inside; had some appetite. On

- the 24th, there was extensive sloughing of the gums, and the upper maxillary bone was denuded; otherwise doing well. June 18th, bone separating; by the end of this month the exfoliation was completed, and the general health quite re-established. *Dr. John Ware.*
84. Top of the cranium, much thickened. *Dr. C. H. Stedman.*
85. A portion of frontal bone, much thickened; from a man who had been regarded as idiotic. (See specimen, No. 119.) The cranium, generally, was more or less thickened. 1837.
86. Disease of the bones of the cranium and face of a South American Monkey; probably scrofulous. The structure is very light and earthy, and the top of the cranium having been sawed off, shows a great degree of thickening. 1833. *Dr. J. B. S. Jackson.*
87. An adult cranium, showing an extreme thinness of the bone in the occipital fossa, being, to some extent, not thicker than writing paper; the bone has become cracked, the edges are curled up, and there is some appearance of an entire deficiency. Something of the kind is also seen in the squamous portion of each of the temporal bones, the cranium being otherwise well. 1841. *Dr. William E. Coale.*
88. Bones of the vault of the cranium held together by membrane; they are exceedingly thin, especially towards the margin, radiate from the centre, and resemble the fœtal bones in structure. From a negress, aged forty-five, who was said not to have been hydrocephalic, though it is impossible to conceive of any other disease that could have produced such a change in the bones. *Dr. George Parkman.*
89. A plaster cast of the skull of an old negro, showing a deep, extensive and symmetrical depression upon each side between the parietal protuberances and the vertex; there is also a remarkable flattening in the temporal regions. The structure of the bone was very light and spongy, and in some places it was extremely thin. This deformity has been seen by Dr. W. in three other specimens. 1847. *Dr. Jeffries Wyman.*

90. Ivory exostosis. Fragments of a large bony tumor, which was removed from the forehead by Dr. Richard Barnum, of North Carolina; the case was published, with an engraving, in the *Baltimore Medical and Surgical Journal*, (vol. i. p. 242.) The patient, a middle-aged man, had had the symptoms of nasal polypus for a year or more, when about the first of April, 1830, the tumor began to appear, having been preceded for some days by violent head-ache and considerable fever. About the first of May it became very painful, and was then nearly as large as at the time of the operation. Soon after this he had convulsions, followed by coma, which continued for several days. On the first of June a large portion of the tumor was removed, measuring three inches in diameter at the base, and one and a half inches in height, with complete relief to the stupor and convulsions, but the effect was attributed to the loss of blood and counter-irritation. In the summer of 1831 the left eye became amaurotic, and in September, 1832, a mass of disease appeared on the forehead, as shown in the engraving, the progress of the case from this time not being given. The density and structure of the fragments are highly characteristic of this kind of tumor; under the microscope, however, it has the usual appearance of bone, as shown by Dr. Wyman, a section having been prepared by him to accompany the specimens. 1843. *Dr. William E. Coale.*

91. Exostosis from the horn of a Deer; it is as large as the fist, heart-shaped, and of an ivory hardness. This specimen was picked up in the woods in the South of Illinois. *Boston Society of Natural History.*

92. A tumor, or exostosis, as it would be called in the mammalia, found upon one of the bones about the lower jaw of a Cod-fish. It is about the size of a small orange, of a rounded form, uneven upon the surface, dense in structure, and composed apparently of fibres radiating from the centre. Having been sawed open, the bone is seen to pass directly through its centre, becoming enlarged, loose in its structure, and intimately connected with the substance of the tumor. *Dr. Winslow Lewis.*

93. Portion of parietal bone; inner surface, to the extent of about

two inches, has a fretted, coral-like appearance, and is slightly thickened. From a child, four years of age, that died of general scrofulous disease. 1834. *Dr. J. B. S. Jackson.*

94. Portion of parietal bone, showing a superficial absorption of the external surface to the extent of about one-third of an inch; it is well defined, and nearly circular; surface rough, and when recent, somewhat vascular; all of the surrounding parts, bone and membrane, were quite healthy. From a young man who died with cerebral symptoms. This appearance might readily be mistaken for a closure of the opening left by a trephine. 1837. *Dr. J. B. S. Jackson.*
95. "The skull of a man who died from the effects of a combination of syphilis and mercury. Pus made its way, through the base of the skull, and thus occasioned his death." The deep-seated bones on the right side of the face are extensively destroyed. 1845. *Dr. Charles H. Stedman.*
96. Portion of the frontal bone from an old syphilitic case. It is nearly half an inch thick and quite solid, the *diplœe* being effaced; rough on the outside, corresponding to superficial ulcerations which existed there, and still more so upon the inside where the *dura mater* adhered. The *pericranium* was much thickened, and the left anterior lobe of the brain greatly diseased. From a man about forty years of age. He had had syphilis about fifteen years before death, and for the last ten had been subject to intense headache, chiefly on the left side; died from an extension of disease to the substance of the brain, the symptoms of which were neither severe nor of long duration. 1834. *Dr. A. A. Gould.*
97. Disease of the whole top of the cranium, from a patient, aged sixty, who died of cancer of the breast; a very beautiful specimen. A considerable part of the bone has been entirely destroyed, much of it is left as a delicate, reticulated structure, and the whole is more or less rough from the process of absorption. Many of the other bones were diseased in the same way. *Dr. S. D. Townsend.*

98. Disease of the lower jaw, from the same patient as the last specimen; the left side only is preserved. The ramus has become a mere shell, and is broken through; body enlarged, and rough on the outside, the soft parts, when recent, being thickened and condensed, somewhat as in the next specimen.

*Dr. S. D. Townsend.*

99. Excision of nearly one half of the lower maxillary bone for malignant disease, by Dr. Walker; removed at the articulation. The specimen is preserved in spirit, and shows a dense, fibro-cellular degeneration of the soft parts about the bone. The patient was the wife of a physician, who gave the following history of the case: The operation was performed in June, 1829, the tumor being then about the size of a hen's egg, uneven on the surface, and very hard; skin distended, and of a deep red, approaching to chocolate color; side of face much swollen; pain almost constant, and at times excruciating; general health much impaired. The pain began in the summer of 1823, and about two or three years afterwards, a small, hard tumor was first perceived about the lower jaw on the left side; the disease had been progressive, and was rapidly so from the time of her marriage in June, 1828, till her confinement in the following March. After the operation she was tolerably comfortable for a time, but the disease returned, and in the course of a year the swelling of the face and tumor were as large as ever, the surface frequently bleeding. Symptoms gradually increased, and she died in June, 1831; eleven weeks previously she fractured the thigh in an attempt to turn herself in bed, the bone uniting in less than six weeks.

*Dr. William J. Walker, of Charlestown.*

100. Lower maxillary bone of a Heifer; an indurated, diseased mass had been removed during life, and as it appeared to be of a malignant nature, the animal was afterwards killed. The bone is affected to the whole extent of the alveoli; it is much enlarged, and partially hollowed out, several smooth, rounded openings communicating with the interior; on the outside is a deep cavity nearly as large as the palm of the hand; the structure of the bone generally is sound, and there is no new deposit. 1841.

*Dr. J. W. McKean.*

101. Malignant disease of the antrum ; a wet specimen. The mass is four or five inches in diameter, partly covered by integument, and being cut through, after it had been some time in spirit, appears to consist of a firm, white, curdy substance. Removed after death from a man aged twenty-two. The disease was on the right side, and had existed about two years ; the eye was pushed out, and the sight of both ultimately destroyed ; nose pushed to one side, and the roof of the mouth broken down ; ulceration through cheek upon the centre of the tumor, and copious hæmorrhage from this part ; died comatose.  
*Dr. S. D. Townsend.*
102. Large portion of the parietal bone gone, the result of an old fracture, the opening being closed by the dura mater and the pericranium, which were very dense and as firm as parchment. The patient, a coachman, died from a second fracture of the same bone.  
*Dr. George Parkman.*
103. Old fracture of the left parietal bone, leaving an opening two inches in length by three-fourths of an inch in width, and closed by the thickened and adhering pericranium and dura mater. The mark of a trephine is distinctly seen, about two-thirds of a circle, the surrounding bone being thickened, and rough on the outside, but on the inside smooth. The patient, aged thirty-five, fell through the decks of a man of war in 1827, and fractured the bone. In 1829 he began to have fits resembling those of epilepsy, with other cerebral symptoms ; afterwards struck the part in a fall down stairs, and became much worse. In December, 1830, he entered the Massachusetts General Hospital ; pressure on the affected part caused pain ; constant headache ; numbness with loss of power in right arm and leg ; in January he was trephined. For eighteen months after the operation he was much better, but the disease gradually returned, and he died in April, 1833. On removing the bone, the membranes were found thickened, and adherent to the brain ; a portion of this last was softened and completely disorganized to the depth of one and a half inches, and to some extent around this spot the membranes and cineritious substance were closely united, and of a cartilaginous hardness. A full history of the case up to the period of the patient's leaving the

Hospital was published in the Medical Magazine, (vol. i. p. 93.)

*Dr. Charles G. Putnam.*

104. An old fracture of the cranium, about the junction of the frontal and parietal bones, leaving an opening about one and a fourth by two-thirds of an inch. Anteriorly the bone is nearly half an inch in thickness, and from its inner surface there projects a solid mass of bone of considerable size, forming a part of the circumference of the opening; there is nothing externally to indicate the situation of this exostosis, if the trephine had been applied during life, for the relief of the epilepsy to which the patient had been subject. "From a man aged twenty-four. When eight years old he was kicked by a horse on the top of the head, and was for a long while disabled, many pieces of bone coming away. From that time he had frequent attacks of epilepsy, usually after indulgence in food; constant sense of uneasiness in head; no pulsation felt at injured part. Two weeks before death he had a very severe paroxysm, was bled to three pints, and soon resumed his business. On the night before his death he had a slight attack, several in the course of the following day, and at eight o'clock, P. M., died." 1834. *Dr. J. W. M'Kean.*
105. Fracture through the base of the skull. 1845.  
*Dr. Charles H. Stedman.*
106. An extensive fracture through the base of the skull, extending on the left side into the parietal bone. 1845.  
*Dr. Charles H. Stedman.*
107. Skull from Porto Rico; near the left temple are seen the remains of an old and extensive injury, probably a sabre wound. The subject was a negro. 1838. *Dr. D. H. Storer.*
108. Extensive sabre wound of the right frontal bone; there is still a small opening quite through, though the injury seems to have been well repaired. Received on board of one of the United States vessels during the war of 1812. 1840.  
*Dr. S. D. Townsend.*

109. A cranium, showing a ball lodged in the frontal bone, just above the right orbit and towards the median line, and which had been in that situation for about twenty-five years. The patient, aged forty-five, was sail-maker on board the sloop of war *Enterprise* in her engagement with the *Boxer*. Whilst loading a cannon, a shot, probably from a canister, hit the carriage of the gun, and glancing, struck him in the forehead and threw him senseless on the deck. In a few moments he arose and finished loading his gun, and whilst doing so, as he said, the ball dropped out upon the deck; he afterwards received, in the same engagement, a severe sabre cut, which penetrated the cavity of the abdomen. In December, 1839, he entered the United States Marine Hospital, at Chelsea, with pneumonia. When convalescent, he, of his own accord, introduced some lint, and plugged up the wound in the forehead, which had always remained open, discharging pus freely; two days afterwards he was taken sick, and the lint was removed with much relief; he, however, continued to grow worse, and died the next day of very extensive, acute meningitis. One half of a large leaden ball is seen to be firmly imbedded in the bone in the situation above described, the flat section being external and oblique, with an opening quite through into the cavity of the cranium, and around this, upon the inside, some deposit of new bone. A question arises as to whether the ball was discharged in the form in which it is now seen, or whether it was split as it glanced against the gun-carriage. 1840.

*Dr. Charles H. Stedman.*

110. A large portion of the lower jaw shot away, the patient recovering with a very good mouth. The specimen consists of a single, entire piece, including the whole width of the jaw, and to the full extent of the incisor teeth, and one, if not two, of the bicuspid. The wound was received on board of the *Guerriere*, in her action with the *Constitution*; the bone was not entirely detached till about a fortnight after the injury, and the soft parts having been brought together, the result was as above stated. 1842. *Dr. S. D. Townsend.*

111. Cranium of a Duck, showing an old, united fracture of the

long, slender bone which articulates posteriorly with the os quadratum.

*Dr. Jeffries Wyman.*

### III. TRUNK.

112. Superficial caries of the bodies of three or four dorsal vertebræ; no curvature. From a man who died at the House of Industry with symptoms of spinal disease.

*Dr. J. W. M'Kean.*

113. Caries of the bodies of the four last cervical vertebræ; wings of the third and fourth ankylosed. From a little girl, aged eleven, who died from extensive tuberculous disease in the lungs and intestines. Several cervical glands were enlarged early in the disease, and about five months before death she complained of pain in her neck, sometimes radiating off to the shoulders; neck stiff.

*Dr. Woodbridge Strong.*

114. Bodies, wings, and in part, the articulating processes of the third and fourth cervical vertebræ firmly ankylosed; the result of former caries. From a man who died of phthisis; nothing known of any affection of the neck. 1838.

*Dr. Charles H. Stedman.*

115. One lumbar and five dorsal vertebræ; bodies extensively carious, two of them being almost entirely destroyed; processes for the most part healthy. Several of the ribs also preserved, being more or less carious, and some of them extensively so; some deposit of new bone on surface. From a man who died with all the symptoms of phthisis, but, upon examination, an abscess was found near the spine communicating with the lungs.

*Dr. S. D. Townsend.*

116. Caries of the spine. The bodies of the two last dorsal vertebræ and first lumbar are nearly destroyed; an abscess existed on each side of the spine, and on one side extended nearly to the groin. From a boy, six or seven years old; always sickly; curvature was one of the first indications of local disease; gait awkward; never much pain in back, but had a great deal in the groin.

*Dr. Edward J. Davenport.*

117. Backward curvature of the spine. The bodies of the four last dorsal vertebræ and first lumbar are so far absorbed that the eighth dorsal and second lumbar approach within a line of each other; firm ankylosis has taken place; spinous and transverse processes more or less absorbed, the depression of the first, which generally exists in these cases, being here strongly marked. Connected with the disease was an abscess, which, terminating in a fistula, followed the iliac vessels, and opened on the outside of the left thigh; in this last were some of the contents of the intestines, and it undoubtedly communicated with the colon with which it was in contact, though the opening was not found. The disease, being advanced thus far towards recovery, had reappeared in another place; the bodies of the fourth and fifth dorsal vertebræ are about one half destroyed, the fifth being detached from its wings; slight curvature had commenced, and an abscess, evidently more recent than the one below, extended from the diseased vertebræ upwards and along the left side of the spine as far as the neck, but did not open externally. The intervertebral substance between the second and third and the third and fourth dorsal vertebræ was completely broken down into a soft, shreddy substance infiltrated with pus, yet the body of the third is not much diseased and the second not at all so. The intervertebral substance, also, from the fifth to the ninth, is entirely destroyed, so far as appears externally, the bones being in contact, though for the most part, they do not seem to be ankylosed; these vertebræ, again, are but slightly carious; the disease, then, in this case, seems to have begun in the intervertebral substance. The pelvis, which is preserved in connection with the spine, is perfectly well formed, and this is an interesting fact in an obstetric view. The spinal marrow has also been preserved, and will be found under its appropriate head. The lungs were free from tubercles, and the other organs were sufficiently healthy.

From a young man, aged nineteen years. Health always delicate. Disease began about six years before death, and was attributed to a fall from a horse. Suffered much from sense of stricture across epigastrium, and also from pain in back when he walked; no paralysis. Almost from the first of the disease there had been an opening in the left thigh, sometimes in one place, sometimes in another, and if at any time

these openings were closed, his sufferings were very much increased; for the last four or five months liquid fæces and flatus were occasionally discharged through the fistula. The patient kept his bed during a great part of his sickness, and became excessively emaciated and deformed. The above history was obtained after the patient's death, from an intelligent brother-in-law. 1835. *Dr. J. B. S. Jackson.*

118. Backward curvature of the spine. The patient, a brick-layer, was about thirty years of age, and had been under the care of Dr. George B. Doane. Eight or nine years before his death he fell about sixteen feet from a ladder, and struck his back; walked home with the help of a friend, and was out on the following day. The accident happened in May; through the summer he kept about, but always complained of pain in his back. In the autumn, after a few days work, which was all he did from the time of the accident, the pain became quite severe, and, on examination, his wife discovered a backward projection of the spine. Sensation and power of motion were afterwards completely lost in the feet and legs, and so continued for about three years, during which time issues were kept open on the back; the sphincters were not affected. After three or four years he got well enough to keep a small shop, the pain being always very great in the back, and sometimes in the side. Died at last of disease of the hip-joint. (See specimen 204.) The bones of the fifth, sixth, seventh and eighth dorsal vertebræ are so far absorbed that the spine is bent to a right angle; they are very irregular and imperfectly ankylosed. Articulating and spinous processes firmly ankylosed, as are also three ribs upon each side. Bodies of two vertebræ immediately below the curvature considerably absorbed on the right side. The sacrum was also carious. (No. 124.) Spinal canal sufficiently free. 1837.
119. Very extensive backward curvature of the spine. The patient, who had been under the care of Dr. John Ware, was an unmarried female, twenty-six years of age, feeble from birth. The curvature commenced when she was twelve years of age; dated from a moxa applied to the back for chronic ophthalmia; increased for three or four years, after which it remained

stationary; when it commenced there was for a time some loss of power in the lower extremities. On examination after death, the curvature was strongly marked externally, but not angular; chest very prominent anteriorly, the sternum rounded, and the deformity altogether very great. Face livid. Great œdema of lower extremities, and in the peritoneal cavity several pints of serum. Old adhesions of both pleuræ, but the lungs quite free from tubercles. The aorta, also, was healthy and of natural size, though like the spine, it was sharply bent upon itself. At the curvature and just on the right of the spine was an old cyst, which was filled with a quantity of white pasty substance, the bone not being exposed. The diseased portion of the spine having been prepared, the curvature is seen to be very strongly marked, and such as to form an angle of twenty-five or thirty degrees. The bodies of the eight last dorsal and first lumbar vertebræ are extensively carious anteriorly, and the last three dorsal are nearly destroyed; the third and fourth dorsal are also carious, but the second lumbar is healthy; the condition of the other vertebræ was not observed at the time of the dissection. The last eight dorsal are firmly united by the bodies and wings, but the rest are free. One of the ribs on the right side is ankylosed, and all of them about the curvature were more or less diseased and compressed; transverse processes sufficiently well, except those of the last two or three dorsal vertebræ; spinous processes, as usual, much depressed. 1840.

120. Four first lumbar vertebræ perfectly consolidated into one mass, and so reduced in size as to occupy the space anteriorly of but three-fourths of an inch; the result of former caries. The backward curvature was very slight, but still it could be perceived upon the external surface of the body. Having been sawed through longitudinally, the bodies of these four vertebræ are seen to consist of one large, continuous mass of perfectly healthy bone, without any vestige of intervertebral substance. The last dorsal and lumbar, and the sacral vertebræ are seen to be healthy. From a stout, healthy-looking man, fifty years of age, who died at the Hospital, April 21st, 1837, from pericarditis supervening on rheumatism. The records state that, when eleven months old, he received an

injury of the back, and did not use his feet for three years afterwards, and that he had been regarded as idiotic from the time of the accident. (See specimen 85.)

121. The bodies of the last dorsal and two upper lumbar vertebræ perfectly consolidated, and reduced in size so as to measure but one and a fourth inches along their anterior face; backward curvature slight, though sufficiently marked at time of dissection; the result, undoubtedly, of caries, though there is no trace of existing disease. From a married woman, about twenty-five years of age, who died under the care of Dr. Homans, of phthisis, with extensive tuberculous disease of the kidneys. When about six years of age she had pain in back, so as to require medical aid; this continued for about two years, after which she had occasionally some obscure trouble there, but this may have been owing to the disease of the kidneys, which from the symptoms and morbid appearances, must have been much anterior to the disease in the lungs. The mother, who gave the history of the case, never observed any backward curvature of the spine till about four years before death. 1838.
122. Old disease of the spine. The body of one of the dorsal vertebræ has been so far absorbed that the anterior edges of the adjoining vertebræ meet, and here become firmly ankylosed. In addition to this, which is the result of former caries, the bodies of several of the neighboring vertebræ are ankylosed by bony matter thrown out upon their edges. From a laboring man, aged fifty-six, who died at the Massachusetts General Hospital, of urinary abscess. His sister reported that he had been hump-backed since he was thirteen years of age, but that he was never paralyzed, nor otherwise confined by his spinal disease. July, 1842. *Dr. George Hayward, Jr.*
123. Lateral curvature of the spine of a Pickerel. The body of the seventh vertebra from the head is completely absorbed on the right side, but not at all on the left, giving it, therefore, a wedge-shaped form, and producing a curvature having an angle of about forty-five degrees. One rib on each side was ankylosed, but they have been accidentally broken off. The whole

spine and most of the cranium have been preserved, and are otherwise healthy. The subject of this specimen was taken with the hand in a brook, and, when first seen in the water, the deformity was very striking; there was no appearance externally of former injury. 1838. *Dr. Jeffries Wyman.*

124. Extensive caries of the upper, anterior part of the sacrum. It is strongly ankylosed to the last lumbar vertebra and a mass of new bone is thrown out over the junction of the bodies of the two bones; the upper edge of the lumbar vertebra is also fringed with new bone; the whole is light and spongy. From a man, aged thirty, who died from disease of the spine, &c. (See No. 118.) 1837.

125. Caries with necrosis of the sacrum where it unites with the left ilium, there being an irregular cavity, and in it three loose pieces of dead bone; the corresponding portion of the ilium was also diseased, but has not been preserved. From a female, about thirty years of age; had had pain for a year and a half, and a fistulous opening at the left groin for some months; continued to work as a domestic till three weeks before death, when she entered the House of Industry, after which she was attacked with diarrhœa and sank rapidly. The fistula extended to the diseased articulation. 1836.

*Dr. M. S. Perry.*

126. An atlas, divided upon the median line into two equal portions; from an adult, dissecting-room subject. Anteriorly, the division extends through the centre of the articulating surface for the odontoid process, the opposing surfaces being broad, like the symphysis pubis, and the edges everted and rough, except towards the articulation, which last is perfectly smooth and healthy. Posteriorly, the wings very nearly meet in two smooth, blunt points. 1847. *Dr. N. B. Shurtleff.*

127. The fifth lumbar vertebra, supposed by Dr. S. to have belonged to the same subject as the last specimen. The wings are separated on each side from the body of the bone between the two articulating processes, but, as in case of the atlas, without any appearance of disease or injury.

128. Absorption of the anterior portion of the bodies of three of the dorsal vertebræ. The surface is irregular, but was covered, when recent, by a thin, semi-organized membrane, and formed part of the parietes of an aneurismal cavity; the intervertebral substance was then prominent, as usual in these cases. The aneurism was situated at the upper part of the abdominal aorta, and caused death by bursting through into the right lung. The patient, a middle-aged man, died at the Hospital, June 17th, 1836. *Dr. Jeffries Wyman.*
129. One dorsal and five cervical vertebræ, showing some degree of exostosis about the edges of the bodies.
130. Exostosis from the edges of the bodies of the four last cervical vertebræ, the two last being ankylosed. *Dr. George C. Shattuck, Jr.*
131. Bodies of five dorsal vertebræ strongly ankylosed by a growth of bone from their edges, this being, as often observed, mostly upon the side. The union is only partial, but where it does not exist, there is a fringed exostosis, showing different stages of the same affection. *Dr. E. W. Carpenter, of Chatham.*
132. Bodies of two dorsal vertebræ firmly ankylosed by a thick, solid mass of new bone arising from the edges; sawed longitudinally, and one half only is preserved. 1838. *Dr. Winslow Lewis.*
133. Lumbar vertebræ of a Horse; edges of the bodies united by thick, strong masses of bone passing across like clasps from one to the other. *Dr. J. D. Fisher.*
134. Strong anterior curvature of the inferior extremity of the sacrum.
135. Dislocation of the cervical vertebræ, without fracture; operation by Dr. W. J. Walker. The accident happened in July, 1837. The patient, a stout teamster, fell from his wagon, which was heavily loaded, in such a way that both of the wheels passed over his neck. Severe symptoms immediately

ensued, and continued, when he was seen by Dr. W., about forty-eight hours after the accident. There was then complete loss of sensation and power of motion below the injured part; respiration entirely by the diaphragm; urine passed only by the catheter, and without any expulsive effort; some priapism; no dejection without medicine, though a small dose only was required; consciousness perfect. On the following day, an incision having been made over the seat of the injury, and the muscles on the right side dissected back, there was found to be a complete dislocation of the fourth cervical vertebra upon the fifth. The spinous process of the fourth was so far separated from that of the fifth as to allow a free examination of the parts, and it was also carried round towards the left side so that the right articulating process rested upon the posterior ring of the fifth, and nearly over its spinous process; the left articulating process of the fourth had been tilted over that of the fifth, and carried forward. No fracture of the bones was discovered, and the sheath of the spinal marrow seemed uninjured. The head of the patient being then grasped by an assistant and forcibly extended, Dr. W. pressed with his thumbs in opposite directions upon the spinous processes, by which means the reduction was perfectly accomplished, the patient feeling so much relief during the extension as to desire that it might be continued; whilst it was being made there were several ounces of blood discharged from within the cavity. After the operation the symptoms manifestly improved; the serrati muscles acted during inspiration, and when the right leg was scratched he felt it, though he thought that it was the left; the bladder, also, aided somewhat in expelling the urine by the catheter; otherwise no change. About the sixth day from the time of the accident he began to grow worse, and on the eighth he died. On dissection, the vertebræ were found in place; the intervertebral substance entirely broken through, but there was no fracture of the bones; spinal marrow ecchymosed to a small extent, rather soft, and appeared rather smaller than usual at the injured part. The preparation represents the vertebræ dislocated as before the operation. In a case which occurred in the Hospital in 1836, the patient lived till the thirtieth day; the sixth cervical was dislocated upon the seventh; there was no fracture of the bones; but a complete laceration of the

intervertebral substance, which amounts to about the same thing.

136. Fracture of the cervical vertebræ. From a man, aged twenty-one, who fell fifteen feet upon the pavement with his head bent upon the chest; the scalp was extensively lacerated, but the skull was not fractured. Died in twenty-two hours after the accident; two hours before death he expressed himself free from pain, but could not move a limb; was perfectly rational, and felt sure that his neck was broken. The processes of the last three cervical vertebræ are more or less broken, and the body of the seventh very much so, though there seems to have been no displacement. The scalp and sinuses of the brain were much crowded with blood. *Dr. Charles G. Putnam.*

137. Fracture of the odontoid process of the second cervical vertebra, from a man who fell down stairs whilst walking in his sleep; he lived a day or two after the accident. *Dr. Charles G. Putnam.*

138. Fracture with displacement of the fifth dorsal vertebra; fatal on the twenty-fourth day. The patient was a healthy-looking man, aged thirty-five, and entered the Hospital on the fourth of August, 1840. Four days before, whilst on a pleasure excursion in the harbor, he attempted to dive into the water from a height of thirty feet, and fell upon the gunwale of the vessel, striking, it was said, the back of his neck, so as to bend the head forcibly forward. From the time of the accident till death there was an entire loss of the power of motion and sensation below the fifth rib, with paralysis of the sphincters. The urine was passed only by the catheter, and after the eleventh day was dark, thick, bloody, very fœtid and strongly ammoniacal. There was much dyspncea, with great pain in the back on motion, a dry, coated tongue, some delirium, tympanites, fever and emaciation, with sloughing over the back of the pelvis; at first some emphysema was observed on front of the chest, but this very soon disappeared. On the fourteenth day the left lower extremities became œdematous, and in connection with this there was found a pretty extensive phlebitis. The spine was only examined once, and then there was noted a slight projection with great tenderness at the seat of injury.

On dissection, the body of the fifth dorsal vertebra was found to be broken through in a longitudinally oblique direction, and the fragments were so displaced that one of them laid by the side of the fourth, and the other against the opposite side of the sixth vertebra, one of the fragments being much comminuted; there was also some displacement backwards of one of them, and a fracture through the wings of the fifth vertebra, so as to completely detach the spinous process. Three of the articulating processes of the fifth, and one of the fourth were broken, with some of the transverse processes, besides the right clavicle, and several of the ribs on each side.

In the specimen, four of the vertebræ have been prepared, with portions of the ribs, the parts which had been fractured or sawed out having been attached by wires.

The theca was torn to a small extent, and somewhat ecchymosed at the seat of injury, and at the same place the spinal marrow had a pulpy softness, and a faint, dull, reddish brown color, to the extent of half an inch, with slight appearances of the same change for an inch above. The muscles were ecchymosed, and there was a little blood in each pleural cavity, with some inflammation of the membrane. The bladder was extensively gangrenous, dark, very offensive, crusted upon the inner surface with an earthy deposit, and filled with coagulated blood, besides a considerable amount of the same effusion in the parietes of the organ; anteriorly, it was comparatively healthy.

139. Very extensive fracture and displacement of the lumbar vertebræ, with other injuries; fatal on the thirty-seventh day. The patient, aged twenty-nine, was run over by a fire-engine; three hours afterwards, when brought to the Hospital, he had no power to move either of the lower extremities, and no feeling in the right leg, though there was still some in the left. The ribs were extensively fractured, and there was dislocation of the sternal extremity of the left clavicle; specimens preserved. The accident happened on the eighth of December, 1838, and the following symptoms were observed:—Entire loss of the power of motion of right lower extremity from first to last, but with some power to move the left leg and toes; frequent tingling and prickling in lower extremities, the

sensibility being by no means entirely lost; complained often of great pain in the lower extremities after the second day, particularly about the right knee. Œdema of right lower extremity after the sixth day, and for the last week there was felt a firm cord, which was supposed to be the femoral vein. Dejections involuntary throughout. Urinary symptoms very urgent; the bladder has been preserved, and this part of the history of the case will be given under its appropriate head. The back was never examined till the seventeenth day, it being impossible to turn him on account of the fractured ribs; then found a projection of the spinous process of the second lumbar vertebra, and tenderness about this part, but not elsewhere; also a slough over the sacrum. Pulse generally varied from 90 to 110; skin often hot; countenance generally pale and tranquil; breathing at first quite painful, with bloody expectoration; slept sufficiently; appetite poor; tongue coated; abdomen swollen and tympanitic; often took cathartics. Four days before death a profuse hæmorrhage took place from the slough, which was then so extensive as to have exposed the sacrum and the sciatic ligament; it was, however, stopped by compression, and did not again return, but from this time the patient sank rapidly.

On examination after death, the body was found emaciated; upper extremities rigid, but the lower flaccid; no œdema; a small slough on each heel, besides the large one over the sacrum. Extensive, acute pleurisy on right side, but otherwise the organs of the chest were healthy. Stomach and large intestine much distended with gas. Kidneys and bladder much diseased, and a mass of recent lymph was found in the tunica vaginalis of left side.

The intervertebral substance between the second and third lumbar vertebræ was lacerated, the anterior-inferior portion of the second, on the right side, being broken off from the body of the bone and remaining still connected with the intervertebral substance. Lateral displacement such, that the right side of the body of the second rests upon the left side of that of the third. Body of the second completely broken from its processes on each side; posterior lamina, connecting the transverse and spinous processes, broken through on each side; the inferior articulating process, on the left side, and the superior,

on the right, are completely dislocated, the two others being more nearly in place; several small, detached pieces of bone crowded into the cavity of the spinal canal. The transverse processes of the first, second, third and fourth lumbar vertebræ, on the left side, and of the second and third, on the right, are fractured, some of them being partially united. Spinous processes of the last dorsal and of the first two lumbar fractured; the first two displaced, but partially united. There was very little new ossific deposit, however, about the fractures. The spinal marrow was not examined, but some of the nerves were found elongated and much compressed by the displaced fragments.

140. Fracture, with displacement, of the last dorsal vertebra; fatal at the end of nine and a half weeks; from a patient of Dr. M. Gay. This patient was a laboring man, and engaged in the removal of an old building, when he was suddenly crushed down by a fall of the ceiling of the room in which he was at work. Immediately on being extricated, he found himself paralyzed below a line drawn horizontally three or four inches below the umbilicus, about which line there was severe pain. For the first few days the urine and fæces were retained, but afterwards the discharges were involuntary; towards the last, however, the urine became turbid and ammoniacal, and the catheter was again required. Very severe pain, for some days, towards the sacrum, but none about the fracture. Loss of sensation and power of motion complete in lower extremities from the time of the accident till death, with frequent sense of burning in legs. Slight backward curvature over seat of fracture for the last three or four weeks, with tenderness on pressure. Mind never affected. Large sloughs formed about the hips, with great emaciation, and the patient gradually sank.

The affected portion of the spinal column having been prepared, and sawed open longitudinally, there is seen to have been an extensive laceration of the intervertebral substance between the eleventh and twelfth dorsal vertebræ, with such displacement, that the upper sharp edge of the twelfth must have very greatly compressed, if not cut across, the spinal marrow. The upper edge of the body of the twelfth is broken

off, and remains in place, connected with the intervertebral substance; the anterior portion of the body, also, is partially fractured, or rather crushed down, as seen by a line which traverses it obliquely, and the inferior articulating processes are completely broken up; some deposit of new bone is seen about these last, but none elsewhere. 1836.

141. The entire spinous process of the sixth cervical vertebra broken off, and removed by an operation. The patient, a man thirty-nine years of age, was struck upon the back of the neck by the falling of a heavy timber, on the 15th of June, 1845. Immediately he lost all power of motion and sensation below the middle of the chest; there was also dyspnœa, with difficulty of expectoration, paralysis of the sphincter ani, retention of urine, and priapism; this last symptom lasted but for a short time; mind unaffected. On the following day, in consultation with Drs. J. C. Warren, William J. Walker and Winslow Lewis, an operation was decided upon, and was performed by Dr. John B. Walker, of this city; an incision was made about eight inches in length over the back of the neck, and, the muscles having been dissected away, it was found that the spinous process of the sixth cervical vertebra was fractured and quite loose, though not driven in; the ligaments which connect this process with the adjacent vertebræ were then divided, and the bone was seized and twisted out; before the operation there had been some tenderness over the seventh spinous process, but no crepitus nor motion could be felt; the hæmorrhage during the operation was abundant. The wound was closed by four sutures, and healed without any trouble. On the 18th, the third day from the operation, there was some return of sensibility, and on the first of September it was reported as quite natural. Catheter required for the first few days, but, on the 19th, the discharge of urine was involuntary, and so continued for some months, since which time he has had sufficient control of the bladder; was also able to give notice before defecation. Very soon after the operation he began to have painful, muscular twitchings of the lower extremities, or cramps, as he called them, and these he has continued to complain of much to the present time; as he lies upon his back, the knees gradually tend to draw up, and when they have been extended, to

do which requires considerable force, he is for a time quite easy; there is also rigidity, with a sense of burning, and an increase of the cramps from an exposure to heat or cold, or from an attempt to move the limbs. About the first of September, it was observed, as he laid with his knees drawn up and spread out, that he had some power to bring them together, but the attempt was apt to bring on the cramps; there was afterwards some increase of power, but not much, and for a long time past his condition has been about stationary. Meanwhile, there has been but little if any emaciation, and his general health has been sufficiently good. Never any pain in neck, and the upper extremities have never been affected. Specimen presented, and the above history of the case given, April 12th, 1847, by *Dr. John B. Walker.*

142. Old fracture of the last dorsal vertebra. The patient, a healthy young man, twenty-four years of age, fell about thirty feet, from the spire of a church, in June, 1842, and lived till the month of May, 1846. From the time of the accident until his death, there was an entire loss of the power of motion and sensibility in the lower extremities, with more or less paralysis of the sphincters. In October, 1843, he entered the Massachusetts General Hospital, and remained there four months; on admission, there was observed a considerable projection of the two last dorsal vertebræ, a slough on the sacrum, and ulcers on the legs, these last having been caused without the patient's consciousness by the application of hot water; paralysis entire, with occasionally much pain in lower extremities. Whilst he was in the Hospital the discharge of urine was involuntary; on the 11th of January, it was reported as "quite turbid and semi-purulent," and so it continued till his death, but without much pain. In connection with these last symptoms there were found calculi in the urinary bladder, with much disease of that organ and of the kidneys; the bladder and the calculi have been preserved, and are described in another place.

A portion of the spinal column, consisting of four vertebræ, having been prepared, it appears as if the body of the last dorsal had been crushed or broken down by the fall, but not much, if at all, displaced; and that subsequently the injured

cancellated structure had been absorbed, and a curvature induced, giving to the bone a wedge-like form, so that whilst it has about its usual thickness posteriorly, it is so thin anteriorly that the bodies of the adjoining vertebræ would very nearly meet, if it were not for a bony ring or lip which arises from the thin edge and projects over the upper edge of the vertebra below. Upon each side, and to some extent, the inferior portion of the body of the bone posteriorly seems to be uninjured. The spinous process preserves its usual relations to the one below, but, as the curvature has gone on, the lamina have become elongated, so that now there is not merely a wide separation between this spinous process and the eleventh, but a deficiency of bone between the base of the two processes to the extent of nearly an inch, and in this respect this specimen differs very much from one of backward curvature of the spine. The laminæ and the base of the transverse and upper articulating processes are irregular and more or less thickened, with some growth of new bone, and it is not at all improbable that these portions of the vertebra may have been involved in the fracture. Upon the upper back part of the body the surface is rough and carious, and here the spinal canal is considerably diminished in size, but, as it would seem, rather from the curvature and some displacement forwards of the eleventh vertebra than from any projection backwards of the twelfth. The carious appearance extends to the back of the eleventh, and there is some growth of new bone from this vertebra, besides a sharp prominent ridge about the carious part of the twelfth. The patient had been under the care of

*Dr. C. H. Allen, of Cambridgeport.*

143. Partial recovery after a severe injury of the spine, twenty years before death. The last three dorsal and first lumbar vertebræ are preserved. The last dorsal appears to be the only one affected by the injury, except for a little bony matter thrown out upon the front of the vertebra above, with which it is pretty extensively ankylosed, though the union seems to be superficial. The body of the vertebra, posteriorly, has its natural thickness, but gradually it becomes thinner, and anteriorly it is reduced to one or two lines, so far as the ankylosis will allow of an estimate. There is considerable irregularity

upon the sides and about the transverse processes, and the general appearance is such as may have been produced by a crushing down of the body of the bone and subsequent absorption, though in structure it seems now as compact as the other bones. The patient was a carpenter, and died in May, 1842, under the care of Dr. William Ingalls, from calculus in the bladder. Twenty years before, he fell from the top of a house, and the family state that an eminent surgeon, who was at once called to him, considered his case as one of fracture of the spine. Perfect paralysis of the lower extremities and of the sphincters immediately ensued, and he kept his bed for two years, being removed only upon a sheet, and requiring a constant use of the catheter. From the time of the accident, he never recovered the use of his limbs, though for the last ten years he moved about rather more, dragging the limbs after him, his general aspect being feeble, and his sufferings from the urinary disease being much of the time very urgent.

144. Obscure injury of the neck. The cervical vertebræ, having been prepared in connection, there is seen to be a wide separation between the spinous processes of the first and second, a retreating of the body of the second, when viewed laterally, with a very marked depression of this vertebra upon the left side, as shown not merely in the altered form and size of the body of the bone, but in the inclination towards that side of the odontoid process, the near approximation of the transverse process to the one below, and the narrowing of the foramina for the nerve and vertebral artery. Posteriorly, the bodies of the second and third cervical vertebræ are ankylosed; also, their articular processes, and to some extent, the laminae upon the left side. There is no appearance of fracture or dislocation, except in the odontoid process, which may possibly have been broken. The patient was a lady, seventy-five years of age, who fell backwards about two years and a half before her death, and was thought to have broken or dislocated her neck. There was no paralysis, but for some weeks after the accident she was confined to her bed, with great pain, and an inability to rotate or flex the head upon the neck; the pain after a while diminished, but never left her, and the neck remained very stiff, the rotation being suddenly arrested, as if by some

- mechanical obstacle, when turned towards one side, though it could be freely turned in the opposite direction. From the time of the accident her general health declined, and she died at last, from internal carcinomatous disease, under the care of Drs. H. B. C. Greene and Henry G. Clark. 1847.
145. Caries of the upper extremity of the sternum, extending to the clavicles. From an adult.
146. Sternum of a child who died from general tuberculous disease. One edge of the bone is carious, and in connection with it there was an abscess which was opened during life.  
*Dr. M. S. Perry.*
147. Necrosis of the upper bone of the sternum. The sequestrum is two-thirds of an inch in diameter, or more, and involves the whole thickness of the bone. From a middle-aged man, who died at the Marine Hospital, of phthisis. The disease of the sternum was the result of a blow which he received some time before the pulmonary disease began, there being, at the time of his death, considerable suppuration about the dead bone, with an external opening. August, 1844.
148. A longitudinal section of the sternum and one of the ribs, showing a cancerous disease of the bones; a wet specimen. When recent, they were filled with a reddish, pulpy, encephaloid deposit, and in many parts could be readily cut through with a knife. In several places, where the outer table of the bone was destroyed, there were found small abscesses, some of which extended into the pectoral muscle. From a lady, aged sixty-nine, who died of cancer of the breast, the internal organs being healthy. 1841.
149. Transverse fracture of the upper bone of the sternum.
150. Transverse fracture of the sternum opposite to the third rib. From a man who had fracture of the spine, &c., the result of a railroad accident.
151. Complete laceration of the cartiliginous substance which

connects the two upper bones of the sternum, but without fracture. Two or three of the ribs, however, were fractured, and the lungs were lacerated. The patient, a man forty-nine years of age, fell from a barn window upon the pavement, about ten feet. This happened in the evening, and he laid there till the next morning, when he was seen by Dr. A. A. Gould, who sent him to the Hospital. On the following day emphysema came on, and in the afternoon he died. A perforation is seen in this specimen, as in No. 37. 1834.

152. An entire set of ribs, showing the existence of twenty-seven distinct fractures in one individual; there was also fracture of the spine, &c. (See No. 139.) Many of the bones are broken in two places, though some of them are uninjured. On the left side the second rib is partially fractured near its anterior extremity, there being a simple transverse fissure through the outer table, whilst the inner is but slightly bent; in the corresponding part of the third rib there is the same fracture, but the inner table is more bent, whilst in the next rib the fracture through both tables is complete; Malgaigne has described partial fracture of the ribs, but in his cases it was the external surface which was unbroken. 1838.

153. A continuous fracture of eight successive ribs, midway; union strong but very irregular; a small exostosis had formed about the seat of fracture in three of them, and where these met a synovial cavity was found, as in the case figured by Cruveilhier (Liv. xxi. pl. 3.) There is also an appearance of fracture of most of the ribs near the angle. From the dissecting room.  
*Dr. H. J. Bigelow.*

154. Five ribs of a Dog, strongly and regularly united after fracture.  
*Dr. Jeffries Wyman.*

155. Two ribs united laterally, near their anterior extremity, by a piece of bone half an inch in width and three-fourths of an inch in length; some appearance of old fracture.  
*Dr. George Parkman.*

156. Exostosis from the corresponding edges of two adjoining

ribs; the new growth came together by smooth surfaces, and when recent, showed some appearance of an articulation. The bones are very light, from interstitial atrophy, as were others in different parts of the body. From the dissecting room. A similar appearance is figured by Cruveilhier, (*Anat. Path.* liv. xxi. pl. 3.) 1840.

*Dr. Hammond*, of Nashua, N. H.

157. Irregular, old fracture of the upper shell of a Tortoise; one portion remains detached, but the rest is firmly united. Recent fractures are also seen. 1838. *Dr. D. H. Storer*.

158. Fracture with depression of a portion of the shell of a Crab; process of reparation shown by a new deposit upon the inner surface. *Dr. J. B. S. Jackson*.

### III. UPPER EXTREMITY.

159. Fibrous exostosis of the scapula. Tumors of considerable size are seen about the spine, consisting of very delicate, bony filaments radiating off from the surface of the bone, from which they can in many places be detached; surrounded by an earthy, periosteal deposit. From the dissecting room. The ilium (No. 197) was similarly affected, and also the cranium; this last is in *Dr. Warren's Cabinet*. 1834.

*Dr. J. B. S. Jackson*.

160. Old fracture of the scapula and two of the ribs of a Monkey. *Dr. Winslow Lewis*.

161. Fragments of scapula, showing the effect of absorption, with some periosteal deposit; a small piece of bone, also, is in the process of being thrown off from the humeral extremity of the clavicle. The patient received a wound from a grape shot, on board of the British frigate *Guerriere*; suppuration was very extensive, and he died in about two months.

*Dr. S. D. Townsend*.

162. Dislocation of the sternal extremity of the left clavicle forwards and downwards. From a case of fractured spine. (No. 139.) 1838.

163. Fracture of the clavicle; union strong but irregular, a small piece having been broken off from one of the principal fragments so as to be felt quite loose beneath the skin. From a man, aged forty-four, who died six months after the accident, from phthisis. 1835. *Dr. J. B. S. Jackson.*
164. Fracture of the left clavicle, from a female, aged twenty-four. 1836. *Dr. M. S. Perry.*
165. Clavicle of an infant, aged seven months. When about two months old it met with an accident, and fracture of the clavicle was suspected by Dr. H.; it was lame for about a month, crying whenever the left arm was touched. Half an inch from its scapular extremity the bone is thicker, broader, more porous, and when recent, it was more vascular than the other clavicle, which is preserved for comparison; as the anterior edge was unaffected, it was thought that the fracture, if there had been one, extended only partially through the bone. 1839. *Dr. Charles T. Hildreth.*
166. Exostosis from the under surface of the outer extremity of the clavicle, with old fracture of the middle of the bone. *Dr. M. S. Perry.*
167. Absorption of the cartilage from the head of the humerus. *Dr. S. D. Townsend.*
168. Upper portion of the humerus, from a little girl who died from general scrofulous disease; shaft of the bone very small, and so delicate as to have been broken in handling the limb after death. *Dr. A. A. Gould.*
169. Old disease of the humerus. The bone is four and one-third inches shorter than its fellow, which has also been preserved, but, otherwise, the two are of equal size. The disease was limited to the upper extremity; the head is broad and flattened, with some exostosis about the edge, and is situated rather on the side than at the extremity of the bone; neck wanting. The patient, aged thirty-five, died at the Hospital of fracture of the spine, August 23d, 1840 (specimen 138); he formerly

had a fistulous opening over the upper part of the humerus, continuing for five years, and leaving a considerable cicatrix, but it was never ascertained that he had ever any discharge of bone.

170. Humeri of a Partridge much enlarged, uneven on the surface, heavy, and very dense; one of them, having been sawed through longitudinally, is seen to consist of solid bone, the cavity being entirely obliterated; articular extremities healthy; by the side of these are two healthy specimens for comparison. The bird was shot by Dr. C.; flight not remarkable. The other bones were healthy, so far as observed. 1838.

*Dr. Samuel Cabot.*

171. Small, irregular exostosis on the humerus, about the insertion of the deltoid muscle. The effect of a blow from a handspike about a year before death. 1838.

*Dr. C. H. Stedman.*

172. Dislocation of the humerus. "The accident happened at the Navy Yard, in Charlestown, November 23d, 1841. A seaman was going down a companion ladder with his hammock over the left shoulder, and having the other arm extended at right angles from the body with his hand upon the hatch to steady him. In this position some one trod upon his arm midway between his shoulder and elbow, and shot the humerus down into the axilla. Several ineffectual attempts having been made to reduce it, I was called in consultation, and adopted the plan recommended by Mr. White; a long bandage was passed over the shoulder across the back and chest to the left hip, and thus the scapula was held perfectly firm. The hand was then carried slowly up, and traction being made upwards in a line with the body, the reduction was at once effected. Thirty days after the accident he died of arachnitis. On dissection, the capsular ligament was still open at the posterior inferior part, no attempt at reparation having been made. Several fibres of the sub-scapularis were ruptured, and, upon cutting across this muscle, a quantity of pus escaped. The joint was filled with pus, and the sub-acromial bursa with purulent serum. Between these two was a small opening, directly over the greater tuberosity, and, on passing a probe, there were felt some loose

pieces of bone, which, upon opening the joint, were found to be detached from this part of the humerus." A portion of the clavicle, scapula, and humerus have been preserved, showing the opening in the articular cavity, and the detachment of two considerable pieces of bone from the tuberosity.

*Dr. William E. Coale.*

173. Dislocation of the humerus. Head of the bone thrown completely off from the glenoid cavity, near the edge of which and upon the under surface of the scapula new bone has been thrown out, and an artificial joint formed; except for this last there seems to be little or no change in the form of the bones, though the accident happened a year before death. The patient retained considerable use of the limb.

*Dr. S. D. Townsend.*

174. Shoulder joint completely destroyed. The head of the humerus and a large portion of the scapula are absorbed, leaving the opposing surfaces quite rough and irregular. There is also a very oblique, old fracture of the upper half of the humerus; union strong, though a small opening is seen through the bone. The patient died of phthisis shortly after his admission into the Marine Hospital at Chelsea, nothing being known of the disease of the shoulder till after death. 1838.

*Dr. Charles H. Stedman.*

175. Scapula and humerus of a Muskrat, showing an entire destruction of the shoulder-joint, the bones being otherwise healthy. 1847.

*Dr. Jeffries Wyman.*

176. Old fracture of the humerus of a Fowl. 1839.

*Dr. Benjamin E. Cotting.*

177. A second specimen of the same; union very irregular.

*Dr. James Jackson.*

178. A third specimen of the same. One fracture is seen about the middle of the bone, united so that the fragments make quite an angle with each other, and another, also very irregular, near the lower articulation.

*Dr. S. D. Townsend.*

179. A sharp exostosis, about half an inch in length, near the middle of the humerus of a Fowl, with some appearance of old fracture. *Dr. S. D. Townsend.*
180. A compound fracture of the lower extremity of the humerus, extending into the elbow-joint, so as to separate the condyles. A large irregular mass of new bone is seen on the back of the outer condyle ; lower portion of upper fragment of humerus smooth as if it had been denuded, and above this the surface of the bone, as far as where it was sawn through, is rough from the new deposit and from the action of the absorbents. The accident happened at sea, and the limb was amputated by Dr. S. at the Marine Hospital, about three weeks afterwards ; the patient did well. 1838. *Dr. Charles H. Stedman.*
181. Compound and comminuted fracture of the lower extremity of the humerus ; excision of the bone, as a substitute for amputation. The patient, a drover, aged fifty-three, of very intemperate habits, was thrown from his wagon, and struck his right elbow upon the ground or upon a stone. The accident happened at Brighton, on the 25th of August, 1845, at half past six, P. M., and Dr. Whittemore, of that place, saw him almost immediately. There was then great pain in the elbow, with considerable swelling and much crepitus ; the condyles were shot forward, leaving the olecranon process very prominent, so as to lead to the suspicion that the ulna was dislocated backwards. On examination, however, there was found to be a fracture of the condyles of the humerus, and a compound and comminuted fracture of the shaft of the bone, several loose pieces being felt about the joint ; the wound in the skin was half an inch in length and just above the inner condyle. On the following morning the patient was seen, in consultation, by Dr. William J. Walker, of Charlestown, when it was agreed to attempt the removal of the loose pieces of bone and thus save the limb ; the operation was conducted by Dr. Walker, and after a long, difficult and painful dissection, the fragments were disengaged and removed from the joint, and the bone was sawed across where the fracture commenced, so as to leave its extremity comparatively smooth. The limb was greatly swollen, and the fragments were so displaced as to be com-

pletely wedged between the end of the humerus and the bones of the fore-arm, and thereby to render reduction impossible, the cavity of the joint, moreover, being extensively torn open. Immediately after the operation, the pain, which until that time had been constantly increasing, began to subside; the following night was passed quietly, and without an opiate; in the morning the limb was found less swollen and quite easy, and from this time forward he did perfectly well; the pulse was fifty-eight after the operation, and sixty-two on the second day, when the patient expressed himself as free from pain and able to walk abroad. On the 7th of November, ten weeks and a half after the accident, he left for home in a buggy, and safely accomplished his journey of more than a hundred and thirty miles. He was afterwards occasionally heard from, and there was every reason to suppose that he would have done well and had a useful limb, had it not been for his intemperance and some accidents to which this subjected him.

The fragments have been cemented together, and the shaft of the bone is thus seen to have been fractured obliquely down to the joint, but so as scarcely to involve the articular portion; the inner condyle is broken off, and there are one or two small fragments, besides others which were not preserved. The whole length of the specimen is two inches and a third.

*Dr. William J. Walker.*

182. Ununited fracture about the middle of the humerus, several large, irregular masses of bone having been formed about the fractured extremities. The patient received a wound from a grape-shot, on board of the *Enterprize*, in her action with the *Boxer*. A seton was passed, which remained three months, but without any improvement, the motion between the bones being quite free.

*Dr. S. D. Townsend.*

183. Ununited fracture about the middle of the humerus; it appears to be rather shortened, and there is scarcely any deposit of new bone. 1841.

*Dr. George C. Shattuck, Jr.*

184. Ununited fracture about the middle of the humerus. Lower fragment absorbed nearly to the condyle; ligamentary union, in its present dried condition, about two inches in length. 1841.

*Dr. George C. Shattuck, Jr.*

185. A portion of the humerus of a child, who, at the age of eleven months, underwent amputation above the elbow, for a very extensive and congenital encephaloid disease of the fore-arm. The operation was performed by Dr. J. M. Warren, and the child did perfectly well till about three months before death, when there came on dyspnœa, which increased so that for the last fortnight it could not lie down in bed; the right side of the chest became much enlarged, but the cough was not urgent, and there was very little constitutional affection; the child was two years and eight months old at the time of its death, and had been under the care of Dr. J. M. Whittemore, of Brighton. On dissection, the right side of the chest was found distended by large, solid, white, encephaloid masses, the lung being very little affected; the left lung was more diseased, and from its surface there hung several pedunculated masses, though the whole amount of disease was vastly less than on the right side. The axillary glands and stump were perfectly healthy, and the bone is seen to be slender and tapering. May, 1845.

186. Disease of the elbow. Humerus mostly affected; light as from interstitial absorption; outer condyle extensively carious; for the last three inches the surface is irregular, porous, and granulated. The joint itself does not seem to have been proportionally diseased. Radius and ulna somewhat diseased at upper part; earthy deposit on surface, with a few small, bony granulations; some enlargement of ulna. The patient was a negro, about twenty-five years of age; the disease was regarded as scrofulous, and the limb was amputated; the knee was afterwards similarly affected, and the thigh was amputated.

*Dr. S. D. Townsend.*

187. Disease of the elbow. Humerus enlarged for three and a half inches above the condyles, and solid; the disease seems to be confined to the surface, which is irregular and porous anteriorly, and covered with thick short spines posteriorly. Radius and ulna enlarged; surface rough; the lower portion being removed the cavities are seen to be obliterated. No caries, and the articular surface of the bones appears perfectly healthy in the dry specimen. "From a scrofulous patient who had had chronic diarrhœa for two years, when inflammation and

enlargement of the elbow-joint supervened; the diarrhœa then ceased, extensive sinuses and suppuration formed about the joint, and the limb was amputated; he died about three months afterwards of phthisis.”

*Dr. S. D. Townsend.*

188. Disease of the radius and ulna, from a limb affected with what were regarded as scrofulous ulcers. Amputation performed by Dr. S. above the elbow, and, secondary hæmorrhage having occurred on the tenth day, the artery was tied in the axilla. Ulna considerably enlarged throughout, irregular, and very rough on the surface; lower two-thirds of the radius similarly affected. Articular surfaces apparently healthy. 1838.

*Dr. Charles H. Stedman.*

189. Radius and ulna twelve years after amputation; ends of the bones rounded, with some sharp projections. Patient wounded on board of the United States frigate Chesapeake.

*Dr. S. D. Townsend.*

190. Radius and ulna after amputation; ends rounded and quite smooth.

*Dr. George C. Shattuck, Jr.*

191. A sequestrum from the ulna; it is six inches in length, and comprises, to a great extent, the entire shaft of the bone. The patient, a young man, eighteen years of age, entered the Massachusetts General Hospital, February 19th, 1845, with violent inflammation of the left fore-arm, of a week's duration, and which he attributed to lifting heavy plates of lead, his business being that of a printer. On the 22d, an abscess was opened near the wrist; on the 2d of April the bone was felt to be denuded, and on the 1st of May it was slightly movable; on the 20th of May there was a hard, unequal swelling in the situation of the ulna, denoting the formation of a new bone; on the 26th, a piece of bone about an inch in length was taken away, and, on the 17th of June, a large piece was removed, being the present specimen, about two inches of new bone having been divided by the cutting forceps. The patient had suffered severely before the operation, but was afterwards relieved, and on the 14th of July was discharged well.

192. Old fracture of radius and ulna, about midway; extensively ankylosed, with shortening, and an inclination outwards of the lower fragments. 1841. *Dr. George C. Shattuck, Jr.*
193. United fracture of the radius and ulna, with a shot imbedded in one of the bones. From a Common Gallinule, (*Gallinula chloropus*,) bought by Dr. C. in the market at Paris.  
*Dr. Samuel Cabot.*
194. Old fracture of the lower extremity of the radius less than an inch above the articulation; strongly reunited, but overlaps considerably. From an adult. 1841.  
*Dr. George C. Shattuck, Jr.*
195. Upper portion of the ulna irregularly fractured, and splintered longitudinally. Probably the effect of a gun-shot wound. ✓
196. The anterior extremity of a Sheep, showing an exostosis, of the size of a large horse-chestnut, arising from the inner edge of the carpus; several of the carpal bones are more or less affected, and the whole limb below this part is directed inwards; the articular surface of the head of the humerus is somewhat eburnated.

## IV. LOWER EXTREMITY.

197. Fibrous exostosis of the os innominatum; the scapula was similarly diseased (No. 159.) Near the acetabulum the bone is thickened, and the surface granulated and porous.  
*Dr. J. B. S. Jackson.*
198. Fracture through the rami of the ischia and ossa pubis on both sides. From a man who was run over by a loaded wagon, and died on the following day. 1838.  
*Dr. Charles H. Stedman.*
199. Gun-shot wound of the os innominatum, with the upper half of a femur, which seems to have been amputated. These two bones, which, from the position in which they were found, probably belonged to the same individual, were dug up at

Mont St. Jean, Waterloo, a place where several hundred of the French are said to have been buried after the battle.

*Dr. J. B. S. Jackson.*

200. A portion of the hip-bone and femur, showing the effects of an injury which was received probably at the time of birth. The patient was a married lady, fifty-nine years of age, and died, under the care of Dr. Homans, of chronic abdominal disease, in August, 1840. When about fifteen months old a lameness was first noticed, and it was then remembered that she received a fall at the time of her birth, which took place so suddenly that she was expelled and fell upon the floor before any assistance could be given; no appearance of injury, however, was then discovered. With the lameness there was a shortening of the limb, but no pain on motion or pressure, and her general health was quite good. As she grew up the shortening increased, until she arrived at the age of twenty years, from which time she wore a shoe which raised the limb about four inches, but even that did not give it the same length as the other. The foot was neither turned in nor out. In her habits she was very active, playing, when a child, as freely as others of her age, and always walking with as much ease and as rapidly as any one; the head of the femur, however, was alternately raised and depressed as she walked, so that, in her latter years, she was in the habit of supporting the hip with her hand. On examination after death, the shortening of the left lower extremity was found to be about four or five inches. The acetabulum is seen to be small, irregular and shallow, and the dorsum of the ilium somewhat hollowed, but without the least appearance of a new socket. About one-third part of the head of the femur remains, irregularly flattened on the surface opposed to the ilium, but about the circumference retaining somewhat of its usual form; the neck is much shortened. In structure both the bones have their usual density, and there is no appearance of eburnation, exostosis, or caries. The first examination was very hastily made, and it was only observed, with regard to the connection between the bones, that the cavity of the acetabulum was filled with a fibro-cellular substance, and that there was a large bursa or synovial cavity near it. The nature of the case is doubtful; there may have

been a simple contusion of the hip, followed by disease of the joint, but it is supposed, on the whole, that there must have been a dislocation at the time of birth.

201. Caries of the acetabulum and head of the femur, from a case of hip-disease. The patient was a sailor, aged twenty-four; the disease began, without any obvious cause, whilst he was at sea, in the autumn of 1842; he continued to do duty till the following June, and arrived here in September. At that time he was pretty comfortable, and could walk some distance, but, falling into the hands of an empiric, he was subjected to very severe treatment, which brought on great pain in the joint. In October he entered the Hospital; the pain then continued, and there was flattening of the right nates, with eversion of the foot, but without any perceptible shortening of the limb. The pain was after a while relieved, but about the first of January symptoms of phthisis came on, and he died April 6th, 1844. Besides the disease of the lungs, there was found a very extensive abscess, communicating largely with the hip-joint, and nearly filled with a coarse, pulraceous mass, the articulating surfaces of the bones being perfectly denuded.

202. Disease of the hip-joint. Cavity of the acetabulum enlarged upwards and backwards, with a deposit of new bone externally. The cartilage seems to have been entirely destroyed, leaving exposed the rough surface of the bones, which, when soaked for a few moments in water, look and feel like soft sponge. Nearly the whole of the ilium, also, on being soaked, becomes quite flexible; bone very light, having lost a great deal of its earthy matter. Head of the femur of its usual size, but below this the bone is somewhat enlarged and dense. "The result of inflammation, brought on by the patient's pumping very laboriously when in danger of shipwreck."

*Dr. S. D. Townsend.*

203. Disease of the hip-joint. "The patient died about two years from the commencement of the disease, hectic; femur dislocated; round ligament destroyed." Disease on the left side. Head of femur partially absorbed; surface rather spongy, except in one spot where it is eburnated. Acetabulum much

enlarged upwards and backwards, being almost destroyed in this direction, but with some thickening of the surrounding bone; inner surface rough, and about its centre is an irregular cavity, in which is a piece of bone eburnated and partly detached.

*Dr. S. D. Townsend.*

204. Disease of the hip-joint. From a patient who had caries of the spine (No. 118.) Disease of hip first noticed about six months before death; there was swelling with great induration and at last suppuration; numerous abscesses opened, and the discharge was profuse; pain very severe; limb much shortened at the time of death, and surface of great trochanter exposed. Disease on right side, the os innominatum and femur being about equally affected. Head of femur and a considerable part of the neck absorbed. Acetabulum almost entirely destroyed. Surfaces rough from caries, with some deposit of new bone upon the surrounding parts. The sinuses about the hip were very extensive. 1837.

205. Os innominatum of left side, showing great enlargement of the acetabulum upwards and backwards, with caries of inner surface. From a lad aged ten years. Disease caused by an injury received when he was about two years old; confined for some weeks, but had very little done for him. Was afterwards in the habit of playing about, suffering all the while from pain in the knee, but in no other part. Four or five years afterwards he had sudden and severe pain in hip, with cramps in the whole limb. In March, 1834, he entered the Alms-house, and was there confined to his bed for some months, with much pain and constitutional affection; fistulous openings after a while formed, and he had a constant discharge of pus from about the hip; after some months he was able to get about on crutches and to go out of doors. For the last six or eight months he made no complaint of pain in the hip, and was tolerably comfortable, though generally failing; his appetite was voracious, and the immediate cause of his death was imprudence in diet.

*Dr. M. S. Perry.*

206. Complete bony ankylosis of the hip-joint. The femur is quite small, probably from disuse of the limb. The bone,

however, is hard and compact, contrasting with the interstitial atrophy, from the same cause as observed in some of the other specimens.

207. Complete bony ankylosis of the hip-joint ; the other joint was similarly affected, as was also the spine from the neck downwards ; the other joints were free. From a gentleman, aged thirty-seven years, a patient of Dr. S. D. Townsend. About ten years before death he began to have rheumatism, and suffered more or less severely for some years, but none for the last five or six. The disease left him a most remarkable cripple ; for a long while before death, the trunk was bent to a right angle with the thighs when he walked, and in carrying forward one of the lower extremities it was at the same time carried inwards, and the whole body seemed to follow the motion. Died of phthisis ; the lungs were extensively tuberculous, and there was also Bright's disease of the kidneys, though there was no dropsy. 1839.

208. Right femur diseased in consequence of an extensive abscess of the thigh ; amputated above the middle of the bone, by Dr. S. Lower extremity healthy, or nearly so, but the bone soon became enlarged, and arched forwards ; surface rough, but no proper caries ; where it was sawed through it has become smaller, is flattened laterally, and the central cavity is obliterated. Probably the effect of simple inflammation. The patient did well. 1838. *Dr. Charles H. Stedman.*

209. Lower end of femur enlarged for three and a half inches above the joint, and carious.

210. A sequestrum from the femur, three inches in length, rough on the surface, and involving about one half the circumference of the bone. The patient was a healthy farmer, twenty-one years of age, and had had the disease for eight years ; it came on with acute inflammation, on the inside of the thigh, after an attack of fever, and was soon followed by a similar affection of the left arm, from which a piece of bone was discharged in about two years. The present specimen was removed at the Massachusetts General Hospital, July 25th, 1845.

211. A sequestrum, nearly three inches in length, from the right femur. The patient was a young woman, nineteen years of age, and apparently in good health. At the age of five years she had a "fever," and at different times since then had discharged pieces of bone from the right femur, tibia, and humerus, and from the lower jaw, which is now ankylosed. 1845.

*Dr. William E. Coale.*

212. Exfoliation of the os femoris about eight months after amputation. It is eight inches in length, thick in the centre, but thin towards the edges, comprising for the most part the anterior half, but at the very lower end the entire calibre of the bone. Amputation performed from injury the patient received during the action between the Constitution and the Java.

*Dr. S. D. Townsend.*

213. Upper portion of the femur, showing the neck much shortened, with ragged exostosis about the head of the bone.

214. Upper third of the femur, showing an exostosis about the neck, which was regarded by many, who saw the specimen before it was sawed open, as the result of fracture, the same mistake having probably been made in some of the alleged cases of intra-capsular union; neck not otherwise altered; head peculiarly elongated or ovoid. 1840.

*Dr. Hammond, of Nashua, N. H.*

215. Exostosis from the anterior face of the shaft of the femur about midway; a thick, solid ridge of bone, two and a half inches in length, and bent over, so that the sharp edge in which it terminates looks towards the inside of the limb. Bone otherwise perfectly sound, though it came from the same subject as specimens 159 and 197.

*Dr. J. B. S. Jackson.*

216. Abrupt and very marked curvature backwards just above the condyles of the femur; articular surface irregular. Bone otherwise well. 1841.

*Dr. George C. Shattuck, Jr.*

217. Large, dense, knobbed, and apparently fibro-cartilaginous tumor encircling the lower third of the femur, but not involv-

ing the joint; the specimen is preserved in spirit, and has not been sawed open. The patient was a young man, sixteen years of age, and of a delicate constitution; the disease came on without any obvious cause, in the autumn, about the year 1828, and was regarded by Dr. Walker as osteo-sarcoma; the limb was amputated in the spring, and the patient died in the autumn following.

*Dr. William J. Walker, of Charlestown.*

218. Disease of the lower portion of the femur, regarded by Dr. S. as osteo-sarcoma. It commences just above the joint, and extends upwards six or seven inches; a large and very irregular mass of light, porous, imperfectly formed bone is seen, arranged in part in radiating fibres, and seeming to arise mostly from the surface of the bone; anterior and inner surface mostly affected; in the recent state the cavities in the new bone are said to have contained blood; the disease is pretty well defined, the articular surface appearing healthy. The limb was amputated at the Marine Hospital, and the patient did well. 1838.

*Dr. Charles H. Stedman.*

219. Femur from a cancerous subject. The bone is now in three pieces, a great part of it having been absorbed; outer surface in many places a mere reticulated shell; the extremities retain their form, but have lost much by interstitial absorption. "From a patient, sixty years of age, who died of cancer of the breast; the femur was broken by merely laying the thigh over the side of the bed; probably all the bones in the body were in this state, as they could be broken with the greatest ease." A large portion of the cranium (No. 97) and lower jaw are in the Cabinet; also the breast, and a scirrhus ovary.

*Dr. S. D. Townsend.*

220. Two femora, which appear to have belonged to the same subject, showing the rounding of the bones after amputation, and also the result of interstitial atrophy from disuse; they are very light, though of full size, the left being somewhat enlarged; bony spine on each extremity. 1841.

*Dr. George C. Shattuck, Jr.*

221. Transverse fracture of left femur, about midway ; the patient died of delirium tremens on the third day. 1838.

*Dr. Charles H. Stedman.*

222. "Fragments of bone from the femur of one of the crew of the British frigate *Guerriere*, who received a compound fracture from a cannon ball, in the action of that frigate with the *Constitution*; result fatal."

*Dr. S. D. Townsend.*

223. Spontaneous fracture of the femur through or just below the great trochanter ; the upper extremity of the bone, the only part preserved, is very light and spongy. From a female past the middle period of life, and affected with rheumatism ; she lived for some time after the accident, but there was no attempt at union.

*Dr. Martin Gay.*

224. Fracture of the neck of the femur from senile atrophy. The patient, a female aged eighty-seven, fell without any known cause, as she was walking across the room. From the 27th of November, 1838, when the accident happened, till her death, on the 11th of the following August, she occasionally sat up, but had to be lifted in and out of bed, and was never willing to bear any weight upon the lame foot ; never any pain except when splints were tried, and these could not be borne ; lost much flesh, having previously been very corpulent. After death the limb was found turned very much outwards, and in this position measured from half an inch to an inch shorter than the other, though the difference appeared very much less when rotated inwards. The upper third of the femur only is preserved ; fracture through the neck mostly, if not altogether external to the capsule ; a large portion of the great trochanter is also broken ; union of both sufficiently firm.

*Dr. Z. B. Adams.*

225. Fracture of the femur ; the great trochanter is broken entirely off, and also the neck at its connection with the shaft of the bone ; union slight. The bone has been sawn through longitudinally. The patient, a lady, seventy-five years of age, received the injury by slipping from a chair as she stooped on one knee to pick something from the floor ; this was on the

6th of January, 1841, and she died on the 3d of the following March, from sloughing of the nates; the limb turned in, and was very little shortened. *Dr. Edward Reynolds.*

226. Oblique fracture of the femur just below the great trochanter; the small trochanter is also broken off; union irregular. From an old woman who died at the Alms-house in the year 1840; the accident happened eighteen months previously, and she kept her bed from that time, resisting all treatment, the limb being very much shortened, and the knee always in a bent position. *Dr. William T. Parker.*

227. Fracture of the upper part of the left femur; union strong, but very irregular. The shaft of the bone seems to have been broken just below the small trochanter, and the whole of the great trochanter has been broken from the neck. Head of the bone much flattened, and the surface quite rough. 1841. *Dr. George C. Shattuck, Jr.*

228. Ununited fracture of the head of the femur. "From a patient who died in June, 1838, at the age of eighty-seven. About four or five years before his death he fell on the ice. He was unable to rise or move the hip-joint, or have it moved without great suffering. There was no shortening of the limb, turning out of the toes, nor perceptible crepitus. Considerable inflammation and pain followed; then finally subsided, but he was never able to bear any weight on that leg. The ligaments appeared not to have been much injured. The ball was attached by the round ligament to the bottom of the acetabulum. The capsular ligament was attached naturally to the margin of the acetabulum and the neck of the femur. The cavity of the joint contained a fluid resembling very thick pus." *Dr. Robert Thaxter, of Dorchester.*

229. Ununited fracture of the neck of the femur. A portion of the os innominatum is preserved, with the upper third of the femur. The head of the bone is detached, but almost entire; the neck is absorbed, and even a part of the shaft, two small, eburnated spots being seen on this last. The bones are very light, as from interstitial atrophy, the effect of long disuse.

From a man, fifty-six years of age, who died at the Alms-house, where he had been for eight or ten years, having met with the accident before his entrance. On examination after death, the right lower extremity was found shortened about an inch and a half, the foot turned somewhat outwards, and the head of the bone could be moved freely forward and back, with a sort of crepitus, the synovial cavity being much enlarged. The head of the bone adhered to the fossa about the round ligament, and the cartilage was partially absorbed. There were also found in this subject exostoses about the bodies of the vertebræ, with partial anchylosis, adhesion of the dura mater, extensive meningeal apoplexy, and parasites (*Trichina spiralis*) in the voluntary muscles. 1842.

*Dr. M. W. Weld.*

230. Spontaneous fracture of the upper third of the femur, from a cancerous subject. The union is very irregular, and a large, thin shell of new bone, of a flattened, oval form, is developed about the upper fragment; contents of this not ascertained, as the bone was not sawed open until after it had been macerated. Upper fragment atrophied, but not the lower. The patient, aged fifty, had a cancer of the breast removed at the Hospital in July, 1836. Four months afterwards, whilst sitting at her fire-side, she was suddenly seized with severe pain in the right thigh; thought it rheumatic, and immediately sent for Dr. Hayward, but never allowed an examination of the limb. The pain gradually subsided, and in the course of six or eight weeks she was able to get up and support herself by sewing till the week before her death, which occurred February 12th, 1837. On dissection, besides the fracture, there was found extensive scirrhus of the stomach, disease of the uterus, and ascites.

*Dr. George Hayward.*

231. Old fracture about the middle of the femur; pretty regular union, though the accident happened at sea.

*Dr. S. D. Townsend.*

232. Very oblique fracture of the femur, about midway; union strong, though there seems to be some shortening. From a man about fifty years of age, who died of cancer of the tongue in May, 1839. *Dr. Andrew Nichols, of Danvers.*

233. Old fracture of the left femur, about midway. The bones overlap more than an inch; and are inclined outwards; bony spine, an inch in length, at seat of fracture. 1841.

*Dr. George C. Shattuck, Jr.*

234. Transverse fracture of the left femur, at the junction of the middle and lower thirds; union strong, though the bones overlap nearly two inches. Sawed longitudinally, and shows the external hard part of the bone at the seat of the fracture becoming cancellated. The patient was a laboring man, aged forty-four, and was treated according to Dessault's plan; lived twenty months after the accident, which occurred in May, 1836, and was carried after death to the dissecting room, where the specimen was obtained by

*Dr. Winslow Lewis.*

235. Compound fracture of the lower part of the femur, extending into the knee-joint so as to separate the condyles. The lower extremity of the upper fragment seems to have been exposed, the surface being quite smooth to the extent of from two to twelve lines; immediately above this there is considerable absorption of the bone with a strong line of demarcation, and the whole surface, as far up as where it was sawed through, is filled with small pores, from an enlargement of the nutrient vessels, and in some places is rough from a new deposit. The accident happened at sea, and the limb was amputated by Dr. S. at the Marine Hospital about eight weeks afterwards; the man did well. 1838.

*Dr. Charles H. Stedman.*

236. Old fracture of the right femur about the union of the middle and lower thirds. Lower fragment very much diseased; the bone is very light, friable, reduced in part to a mere shell, and to a considerable extent is entirely destroyed, though this last may have been accidental; the cause of this great absorption is uncertain, as nothing is known of the history of the case. The upper fragment is quite sound, and the union is strong, though very irregular. 1841.

*Dr. George C. Shattuck, Jr.*

237. Old fracture of the left femur just below the small trochanter; strongly united. The upper fragment is about four inches in

length, and terminates superiorly in a smooth, blunt extremity, showing no trace of the head nor even of the neck of the bone, the great trochanter, however, being sufficiently distinct; this may have been the result of an ununited fracture of the neck. 1841. *Dr. George C. Shattuck, Jr.*

238. Fracture of the femur of a Fowl, midway; union very regular. *Dr. S. D. Townsend.*

239-40. Two other specimens; union strong, but very irregular.

241. Fracture of the femur of a Goose, midway; the fragments overlap by nearly their whole length, and the union is slight. *Dr. S. D. Townsend.*

242. Disease of the knee-joint. Deep excavations are seen in the head of the tibia and fibula, and about the inner condyle of the femur, with similar disease of the patella. A periosteal deposit, upon the inside of the femur, is well shown where the bone was sawed; there is a mass of new bone, also, on the inner condyle, about half an inch in diameter, and the surface of the bones generally, about the joint, is rough and porous. The patient injured his knee by falling on the ice; extensive suppuration ensued, and the limb was amputated several months after the accident. *Dr. S. D. Townsend.*

243. Disease of the knee-joint; the cartilage seems to have been entirely destroyed, with caries of the articular surface of the bones. The disease had existed for ten or twelve years. For the first two years there was stiffness with some pain, and at one time the patient was confined by an abscess about the knee, which was very painful, but did not seem to involve the bone. He then went to New Orleans, and remained there for six or seven years, during which time the knee was nearly well. On his return to this city the disease became worse than ever, and for a long while he was confined with much local and constitutional affection. Amputation was then performed by Dr. Strong, after which his health was fully restored, and with the aid of an artificial limb he is able to keep about and perform the duties of book-keeper in one of the Banks in this city. 1838. *Dr. Woodbridge Strong.*

244. Disease of the knee-joint. The articular surface of the bones is carious, though not extensively so, and a fragment of considerable size is in the process of being detached from the head of the fibula. The patient was a young man, aged nineteen. Disease of about two years duration, and followed a blow; came on insidiously, and when first seen in October, 1837, the knee was much enlarged, and so much diseased that there seemed very little chance of saving the limb. Sinuses at last formed, the constitution failed, and it was not till then that he had much pain. Amputation was performed by Dr. M'K. in July, 1838, and the patient regained his usual health.

*Dr. J. W. M'Kean.*

245. Disease of the knee-joint, coming on about a year after fracture of the leg; the limb was amputated by Dr. Stedman, and the patient did well. The back part of the femur is rough from a new deposit as high up as where it was sawed through. The inner condyle is enlarged and rough, and the articular surface of this condyle, to the extent of one inch and a third by two thirds of an inch, is eburnated, and perfectly free from fat, with which the surrounding bone is saturated; remainder of the articular surface of the femur somewhat rough, though it does not seem to have been much diseased. The articular surface of the tibia is much more carious, especially towards the inside. The fracture of the tibia is irregular, commencing about two and a half inches below the joint, and extending to below the middle of the bone; union strong, but such as to leave the anterior line of the bone concave; upper extremity of the fibula fractured, and strongly united. 1838.

*Dr. Charles H. Stedman.*

246. Disease of the knee-joint, with an old fracture of the upper third of the tibia and fibula. Articular surfaces irregular, with some traces of eburnation; lower extremity of femur fringed with exostoses, and some of the same about the tibia; surface of fibula also rough from osseous spines and knobs. 1841.

*Dr. George C. Shattuck, Jr.*

247. Complete bony ankylosis of the knee-joint, except for a small opening through the centre. There is deep and extensive

caries upon the inside, and the femur is enlarged and uneven upon the surface; patella ankylosed, and partially absorbed. Joint bent to an angle of about one hundred degrees.

*Dr. George Parkman.*

248. Specimen similar to the last, but in which the bones are perfectly sound; the opening through the centre of what was formerly the joint is larger than in the other case.

*Dr. George Parkman.*

249. Complete bony ankylosis between the inner condyle of the femur and the head of the tibia, the outer condyle and the patella being free. From a man, aged twenty-five, who died of phthisis at the Massachusetts General Hospital, November 27, 1842; ten years before, he had wounded the right knee-joint with an axe; never had any discharge of bone; knee bent nearly to a right angle.

In the next division is a specimen of fleshy ankylosis of the knee-joint, which might perhaps have been introduced here.

250. Portion of the bones of the thigh and leg of a little girl who received a lacerated wound from being run over by a loaded truck. Extensive sloughing of the muscles took place, contraction of the leg upon the thigh, displacement of the patella, and atrophy of the muscles. The bones are preserved in their natural connection, and the specimen shows an extreme contraction of the joint, the outer condyle of the femur being absorbed, and its place being occupied by the patella. The limb was amputated ten years after the accident.

*Dr. Abel L. Peirson, of Salem.*

251. Ragged exostoses about the edge of the patella; similar to what is so often seen about the bodies of the vertebræ and the head of the femur.

252. Transverse fracture of the patella, the fragments being separated about two thirds of an inch. A wet specimen.

*Dr. Winslow Lewis.*

253. Fracture of the patella, in which the fragments are separated four inches. A dry specimen.

*Dr. S. D. Townsend.*

254. Tibia and fibula much enlarged, and rough on the surface from numerous osseous granulations, spines, &c.; bones solid; lower extremities ankylosed. From a man about sixty years of age. Had had an ulcer on lower part of leg for about thirty years. Two years before he applied for advice he had a fever, after which the ulcer increased, so that, when the thigh was amputated by Dr. J. C. Warren, it involved the whole circumference of the lower third of the leg; had excessive pain about the outer angle, to explain which a nerve of considerable size was found passing between one of the rough, broad exostoses; the ankle-joint was almost immovable from the thickened, condensed state of the cellular membrane. The patient did well. *Dr. Charles T. Hildreth.*
255. Bones of both legs of a sailor. The tibiæ are much enlarged, heavy, and grooved on the surface like worm-eaten wood; one of them having been sawed through longitudinally, the enlargement is seen to be owing in a great measure to a deposit upon the surface, the limits between the old and the new bone being in some places well marked. The fibulæ are less enlarged, but rough from osseous spines, intersected by deep grooves. *Dr. George Parkman.*
256. Tibia and fibula, diseased as in the last two specimens, though more so, and especially the fibula, the bones being co-ossified from below upwards to where they are sawed across. The limb was amputated below the knee, for an ulcer on the leg, and the patient did well. 1838. *Dr. Charles H. Stedman.*
257. Tibia and fibula of the right leg; the patient had an immense ulcer, which came on after "bilious fever;" amputation below the knee was performed by Dr. Stedman, and the man did well. The fibula, to a considerable extent, is very greatly enlarged and covered with rough spines and inequalities. Tibia also enlarged and rough, but much less so than the fibula; where it is sawed through it is seen that much of the enlargement is owing to a deposit of new bone upon the surface of the old. 1838. *Dr. Charles H. Stedman.*
258. Tibia and fibula of the left side, from a case of old ulcer;

removed after death. The tibia is somewhat enlarged, the surface rough, and the whole bone curved so as to form a remarkable convexity inwards; the two bones are ankylosed firmly at the lower extremity. 1838.

*Dr. Charles H. Stedman.*

259. Tibia and fibula from a case of old ulcer of the leg, but much less diseased than in the above cases; removed after death. 1838.

*Dr. Charles H. Stedman.*

260. Bones of the leg; upper third removed, perhaps by amputation, the history of the case being unknown. The tibia is uniformly and greatly enlarged, heavy, rough on the surface, and towards the lower extremity has a worm-eaten appearance; line of periosteum not traceable where it has been sawed across. Fibula very little affected. 1841.

*Dr. George C. Shattuck, Jr.*

261. Old fracture of the bones of the right leg. The tibia is broken midway, and the fibula somewhat higher up; union strong, but very irregular. 1838.

*Dr. Charles H. Stedman.*

262. Old fracture of the tibia and fibula three inches above the lower extremity; very regular union; both bones have been sawed longitudinally. From a middle-aged woman; the accident happened about twenty years before death. 1836.

*Dr. M. S. Perry.*

263. Very oblique fracture of the lower third of the right tibia, with transverse fracture of the lower extremity of the fibula. From a man, fifty years of age, who died at the M'Lean Asylum in December, 1837, about four years after the accident.

264. Old fracture of the left tibia towards the lower third, and of the fibula a little higher up. Union strong, but very irregular; shortened by more than an inch, and so inclined as to make an angle outwards, the upper fragment of the fibula being ankylosed with the lower fragment of the tibia. 1841.

*Dr. George C. Shattuck, Jr.*

265. Old fracture of the lower third of the tibia and upper third of the fibula; both very oblique. Anchylosis between tibia at seat of fracture and fibula. The upper third of the tibia is enlarged, as from inflammation of the substance of the bone. 1841. *Dr. George C. Shattuck, Jr.*
266. Old oblique fracture of both bones of the right leg; union strong and irregular, with extensive anchylosis; surface generally rough. From the dissecting room; the subject was a middle-aged man. January, 1847. *Dr. Winslow Lewis.*
267. Recent compound fracture of the right leg, the patient having met with the same accident in the same limb fourteen years before. The old fracture of the tibia was just below the middle of the bone; union strong, though irregular; immediately below this, but not involving it, is the recent fracture, the direction being transverse as seen on the upper fragment, though the lower fragment is comminuted. The old fracture of the fibula was towards the upper third; the union is strong though very irregular, and immediately below, though not involving it, is the present fracture; the same bone is also broken towards its lower extremity. No experiment could show better the strength of an united fracture. The patient, an Irish laborer, aged forty-five, entered the Massachusetts General Hospital August 22, 1838, two hours after the accident, the skin and muscles of the right leg being extensively injured. On the following day amputation was advised, but to this he would not consent, having, as he said, already lived through one such accident. The constitution, however, soon began to be affected, the appearance of the limb was very bad, and on the 28th it was amputated above the knee; but the patient continued to sink, and died on the 6th of September.
268. Compound and comminuted fracture of the leg. The patient, an Irish laborer, aged sixty-five, of intemperate habits, and a broken down constitution, entered the Massachusetts General Hospital August 22, 1838, and amputation would have been performed at once but for the state of the system. He was removed to the Alms-house, December 14th, and about five or six weeks afterwards died. Some of the fragments have

united very irregularly, and others not at all; there is also some separation of the old, and a considerable deposit of new bone.

*Dr. Ezra Palmer.*

269. Old and strongly united fracture of both bones of the leg, four inches above the ankle-joint. From the perfect smoothness of the anterior edge of the bones, and general inclination forwards of the lower fragments, contrasted with the irregularity and rather abrupt angle observed upon the posterior face, this appears much like a case of partial fracture; yet the patient was an adult, a celebrated horse-jockey. A narrow slip of bone, half an inch in length, projects very abruptly from the posterior edge of the fibula.
- Dr. George Parkman.*
270. The lower extremity of a Chicken, the tibia being twisted so that the foot points directly backwards; the result of external injury, with perhaps a partial fracture.
- Dr. Samuel Cabot.*
271. Compound fracture of the tibia of a Sand-piper. Union entirely by new bone, and very irregular; a portion of the upper fragment, two lines in length, protruded externally, and was in the process of being thrown off. 1838.
- Dr. Henry J. Bigelow.*
272. Fracture of the upper third of the tibia and fibula of a Baboon. 1836.
- Dr. Winslow Lewis.*
273. Upper portion of the tibia and fibula of both sides, from a man who had both limbs amputated for frozen feet; he lived one year after the operation, and the ends of the bones have become rounded and perfectly smooth.
- Dr. S. D. Townsend.*
274. Tibia and fibula, fourteen years after amputation below the knee; rounded and perfectly smooth as the above. From a man aged forty. 1838.
- Dr. A. A. Gould.*
275. A third specimen; history unknown. 1841.
- Dr. George C. Shattuck, Jr.*

276. Disease of both bones of the leg and ankle-joint. The last three inches of the tibia and fibula are enlarged; the surface is rough and porous, the structure light and fragile, and within the tibia there is a mass of dead cancellated substance, there being two very well defined openings from the internal cavity, besides a larger one which may be in part accidental. The two bones are ankylosed to a small extent. The astragalus is partly absorbed, its form much altered, and it is extensively ankylosed with the tibia and os calcis. The patient was a large, healthy-looking woman, sixty-two years of age, and had had a swelling about the ankle-joint for many years, with much pain and discharge; the limb was amputated below the knee by Dr. L. about eight years ago, and she did perfectly well. 1847. *Dr. Winslow Lewis.*

277. Disease of the tibia. The lower portion of the bone is enlarged, rough on the surface, and very light from interstitial absorption.

278. Tibia and fibula, showing caries of the inner malleolus; also patches of new deposit in several places upon the surface of both bones.

279. Sequestrum, eight inches in length, from the tibia of a little girl, about six years of age, the disease having existed for several years; an operation was performed, and death ensued within twenty-four hours, apparently from exhaustion. *Dr. J. H. Lane.*

280. Portion of tibia affected with a venereal node, and sawed open longitudinally to show the condition of the bone; it is solid, compact in structure, and considerably enlarged; rough and fretted on the surface; no appearance of periosteal deposit on cut surface; cavity somewhat narrowed. From the same subject as No. 96. This patient had suffered much from pain in the limbs. *Dr. A. A. Gould.*

281. Venereal node on the right tibia; it commences just above the lower extremity, and extends upwards about five inches; whole circumference affected except the front; bone enlarged, and the surface rough. 1838. *Dr. Charles H. Stedman.*

282. Venereal node on the inside of the left tibia, towards the lower extremity. 1838. *Dr. Charles H. Stedman.*
283. Venereal node on the inside and front of the left tibia, towards the lower third; there is also some disease higher up. The appearance of the bone is about the same in these last three cases. *Dr. Charles H. Stedman.*
284. Tibia of an adult female, showing the effect of a venereal ulcer four inches above the ankle. At this part there is a well defined and very considerable thickening of the bone to the extent of about one inch and a half; the surface has a coral-like roughness, and the surrounding bone is enlarged.
285. A small, irregular growth of bone from the spine of the tibia, connected with an ulcer which was regarded as venereal. From a young female, who died at the Alms-house of typhoid fever. 1834. *Dr. J. W. M'Kean.*
286. Fungous growth from the tibia. The patient, a slave driver, aged thirty-eight, from the south of Florida, entered the Massachusetts General Hospital April 17th, 1838, and reported as follows:—About seventeen years ago he had fever, in the course of which boiling water was poured upon his legs to produce vesication; extensive ulceration followed, and continued till last summer, when the left leg healed. On the right leg the ulcer has remained open; two years ago it began to assume a fungous appearance, and last January, being very large, it was removed, and the tibia was scraped, but it has since returned, and is now larger than ever, very painful, occasionally bleeding, and exceedingly offensive. Has had quotidian yearly since first attack of fever, but otherwise sufficiently well till two years ago; since then has kept his bed, taken laudanum freely, and is now greatly reduced, and almost bloodless in appearance. Three days after admission the limb was removed below the knee; during the operation he lost much blood, and two weeks afterwards he had secondary hæmorrhage, for which the femoral artery was tied; his general health, however, improved very much, and on the 14th of July he was discharged well, though the stump had not quite healed.

The limb having been very fully injected with size and vermilion, the fungous growth assumed at once very much the appearance that it had before the operation, of a large mass of exuberant granulations, measuring six inches in length, three or four in width, and rising abruptly two inches or more above the surrounding surface, which was quite healthy. A longitudinal incision having been afterwards made through the centre of the diseased mass, and extending quite through the limb, the tumor was found to be solid throughout, of a whitish color, consisting of a coarse fibro-cellular structure, the fibres radiating from an opening in the tibia towards the surface of the tumor, and being mixed with a more opaque and softer substance; no encephaloid substance nor effused blood; the bone and periosteum appeared healthy, except for the opening, which was about an inch in extent. One half of the limb having been put immediately in alcohol, the above appearances are well preserved.

287. A small exostosis from the inside of the head of the tibia. From a middle-aged man. *Dr. J. B. S. Jackson.*

288. Fracture of the fibula, midway; union very regular.

289. Exostosis from the upper portion of the fibula. It is about the size of an English walnut, rough on the surface, but quite solid, and arises by a smooth peduncle an inch in length by one-third of an inch in diameter. Removed by Dr. W. from a man at the State Prison.

*Dr. William J. Walker, of Charlestown.*

290. Lower half of the fibula greatly diseased; bone enlarged, rough and earthy on the surface, and very light.

291. Disease of the fibula. The lower portion of the bone is enlarged to the extent of four inches, and has, externally, a coarsely reticulated appearance, there being some appearance of a sequestrum within; otherwise the bone is quite sound.

292. Tibia and fibula firmly ankylosed to the astralagus, the tibia being somewhat enlarged. 1841.

293. Disease of the ankle-joint and tibia, from a young woman who died of phthisis at the Massachusetts General Hospital, in November, 1837; nothing known as to its history. The tibia, astragalus, and os calcis are anchylosed. The shaft of the tibia is rather slender and cylindrical, uneven, and along the inner surface quite rough, but without any appearance of necrosis; head of fibula anchylosed. Bones generally rather light, especially towards the lower extremity, where in some parts they are reduced to a mere shell. Before dissection, the head of the tibia seemed to project very much inwards, the skin over almost the whole length of the shaft anteriorly being bound down, dense, and shining, with here and there a dried scab, as from some old ulcer or sinus; no suppuration in the soft parts.
294. Ragged exostosis about the posterior extremity of the os calcis; similar to those which are so often seen about the vertebræ.
295. Anchylosis of the astragalus and os calcis, from an adult.  
*Dr. Winslow Lewis.*
296. Anchylosis of the astragalus, os calcis, and os scaphoides, from the same patient as the last specimen.  
*Dr. Winslow Lewis.*
297. Bones of the foot and leg prepared in connection, and showing the changes which take place in club-foot. From a healthy-looking Irish girl, aged twenty-five. When about four years old she was run over by a truck, causing a wound on the right side of the head. For two days she was senseless, but afterwards was as well as usual till about three weeks after the accident, when she was attacked with numbness and severe pain in the left foot and lower half of the leg, also in the sole of the right foot. The numbness in the right foot disappeared in five or six months; on the left side it continued for about two years, and then diminished. No pain after the first night. Was obliged to use crutches, being unable to bear any weight on the left foot; the limb was much smaller and shorter than the other, and on account of the great incumbrance the patient desired its removal; in November, 1837, she entered the

Massachusetts General Hospital, and amputation was performed below the knee. The foot was affected as in case of varus, and the form of the tarsal bones and their articular surfaces is seen to be much altered, as is usual in that deformity, (Cruveilhier, Anat. Path. liv. ii.); there is also the approximation of the tibia and fibula noticed by Cruveilhier. The bones of the foot are exceedingly light, from disuse.

298. Interstitial atrophy, from disuse. The tarsal bones from a case of diseased knee-joint (No. 243); they retain their full size, but are as light as cork. *Dr. Woodbridge Strong.*
299. Exostosis with ankylosis about the tarso-metatarsal articulation of a Horse.
300. Metatarsal bone of a Deer, fractured midway, and regularly united. 1847. *Mr. Samuel L. Bigelow.*
301. Old, ununited fracture of the metatarsal bone of a Fowl, near its upper extremity. *Dr. S. D. Townsend.*
302. Fracture of the lower part of the metatarsal bone of a Plover; the union is sufficiently regular, though not yet complete. *Dr. Samuel Cabot.*
303. Necrosis of the os calcis. The patient was a middle-aged man, and froze both of his feet last December, whilst in a state of deep intoxication. They soon sloughed off as far as the tarsus, and for some time past the greater part of the os calcis on both sides had been entirely denuded and nearly black. Dr. W. saw this patient recently, whilst on a visit into the country in regard to another case; he found him suffering severely and earnestly desirous of immediate relief. The os calcis upon the right side, with the astragalus, were therefore removed; and, by sawing off the malleoli, a sufficient flap was obtained. May 10th, 1847. *Dr. J. M. Warren.*
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## III. SOFT PARTS ABOUT THE BONES.

304. Ligaments of the shoulder-joint.

305. Ligaments of the knee-joint.

306. Ossification of the cartilages of the ribs.

*Dr. George Parkman.*

307. The middle finger of the right hand torn off by machinery, and the flexor tendon with the muscle drawn out; a wet specimen. This case happened more than thirty years ago, in the practice of the late Dr. John Jeffries. The patient, who is still living, was a healthy, middle-aged man; the jagged end of the bone was sawed off, and for the first three days there was some soreness along the fore-arm, but without any swelling; the wound, however, was very painful, and did not entirely heal till three months after the accident. 1843.

*Dr. John Jeffries.*

308. Last joint of the index finger torn off, drawing out with it the flexor tendon, and a small piece of the muscle; a dried specimen. The patient, a healthy lad, seventeen years of age, got his finger caught beneath a heavy piece of timber, and without waiting for assistance, made a sudden and strong effort, and tore it off at once. Dr. G. finding the second joint in a bad condition, amputated it, and the lad soon recovered without an unfavorable symptom; at the time of the accident the pain was by no means so great as would have been expected, and on the following day he complained only of soreness along the fore-arm.

*Dr. James B. Gregerson.*

309. A bursa over the patella, two inches in diameter, and about half a line in thickness; it contained a serous fluid, and some small, amorphous, fibrinous masses, the free motion of which was readily felt before the cyst was opened; these masses are seen at the bottom of the jar. From a middle-aged female.

*Dr. J. B. S. Jackson.*

310. A dense, fibro-cellular tumor, removed by Dr. P. from over the patella. It is three inches in length, two inches and a half in width, and an inch and three-fourths in thickness; convex anteriorly, but flat posteriorly. Not far from the centre is a coarse cellular tissue, about an inch in extent, into which the probe enters somewhat freely, and on the skin there is seen the mark of an issue. This tumor probably originated in a bursa; Sir B. C. Brodie says, in his *Work on the Joints*, "sometimes the membrane of the bursa becomes thickened and converted into a gristly substance. I have seen it at least half an inch in thickness, with a small cellular cavity in the centre containing synovia."

*Dr. Abel L. Peirson, of Salem.*

311. A bony and cartilaginous mass removed from the knee-joint; operation fatal on the tenth day. The size of the specimen is remarkable, measuring, now that it is dried, sixteen and a half lines in length, from six to eight and a half in width, and in thickness from one and a half to two lines. It consists almost entirely of bone, though on one side, which is strongly concave, there is a layer of dried cartilage, which, when recent, constituted one-third or more of the entire mass; the other side is convex, with some irregularities.

The patient, a healthy-looking young man, twenty years of age, entered the Massachusetts General Hospital, February 21st, 1842. Twelve years before, he fell about six feet, and struck the inside of the left patella; this was followed by much pain and swelling of the joint, which continued for three or four weeks, when it passed off, and he felt no further inconvenience for six months. The knee then began to swell, and, on examination, a hard, movable body was felt on the inside of the patella, about the size of a bean, and without tenderness. From that time he was subject to frequent attacks of pain and swelling of the knee; pain usually not severe, the principal trouble being from the slipping of the foreign body between the femur and the tibia; neither this body nor the patella could be felt when the knee was swollen. On the 5th of March, an incision was made over the outside of the joint, and the foreign body was removed, having been found perfectly free; inflammation supervened on the evening of the same day, followed

by the most severe constitutional symptoms, and the patient died, as above stated, on the tenth day.

On dissection, extensive abscesses were found communicating with the knee-joint, which was intensely inflamed; also, a large abscess beneath the psoas muscle, which opened into the cavity of the hip-joint. There was also other disease of the knee-joint, connected with the attacks of inflammation to which the patient had been subject previous to the operation, viz.: an extensive destruction of the cartilage about the middle of the inner condyle of the femur, and an increased breadth of the corresponding surface of the tibia, with some absorption of cartilage on its internal edge, and exostosis on the anterior. There was, however, no appearance about the bones to show that a piece had ever been knocked off by external violence.

312. Loose bodies from a ganglion above the wrist. The patient, Mrs. M., aged fifty-three, entered the Massachusetts General Hospital, July 31, 1840. The disease had been forming for a year or more, and for the last ten months there had been a swelling in the palm of the hand; the fluctuation beneath the annular ligament was distinct, and accompanied with a grating feel; pain not constant, but lancinating, and frequently shooting up the arm. On the day of her admission a free incision was made by Dr. Townsend into the sac above the wrist, and about one hundred of these loose bodies were discharged, with a small quantity of synovia. They are perfectly white, smooth, polished, on an average about the size of apple-seeds, some of a very regular, oval form, but many of them quite irregular; the consistence is about that of fibrine, and there is no difference in them except as to size and form. The opening was enlarged twice subsequently to the first operation, and the patient was discharged, doing well, on the 12th of September.

313. A second specimen, similar to the last. The patient was a sailor, about twenty-five years of age, and the disease had existed for about a year; there was a fluctuating tumor above and below the annular ligament, and the loose bodies could be felt to move freely within it. The operation, which was done about a year since, was not followed by inflammation of the parts, and the disease has now (February, 1843) returned.

314. Pendulous excrescences from the cavity of the knee-joint. One of them is about the size of the last joint of the little-finger, and the other about two-thirds as large; they appear to consist of condensed cellular membrane, with some fibrous structure; the form is regular, the edges rounded and not fringed, the surface polished, and they are now of a yellowish color, looking at first not unlike masses of fat, though when recent they are reported to have been of a bright red color. The patient was a female, twenty years of age; had had effusion into the bursa over the patella for about a year, and, as this subsided, the disease within the joint was discovered; it did not cause much if any pain, and did not arrest her suddenly whilst walking, as loose cartilages usually do. An incision having been made over the inner condyle, the excrescences were removed, and the patient did well.

*Dr. Abel L. Peirson, of Salem.*

315. A tumor, removed by Dr. L. from the knee-joint. It appears to consist of a condensed cellular substance, and is about one inch and three-fourths in length, one inch in width, and half an inch at the thickest part; it is flattened on one side, and convex on the other, the edges are fringed, as in Cruveilhier's figure, (*Anat. Path. liv. ix. pl. 6.*) and the surface is somewhat rough, the edge by which it adhered to the interior of the joint being of a bright red color when recent. The patient was a lady, twenty-four years of age, and had been under the care of an empiric for six months when Dr. L. first saw her; the principal complaint was of severe pain which would seize her suddenly whilst walking, and compel her instantly to stop; the lameness, left by the pain, would subside in a few days, and then she would be quite relieved. Her general health was good, and she did perfectly well after the operation.

*Dr. Winslow Lewis.*

316. A second tumor removed from the knee-joint by Dr. L. It is one inch and a third in length, two-thirds of an inch in width, and one-third of an inch in thickness; the form is oval, both surfaces are flattened, and it consists apparently of condensed cellular tissue. The patient was a female, aged twenty-seven, of bad constitution, and had had the disease for six or seven

years, but was not liable to be arrested by such severe pain whilst walking as was the last patient. Severe inflammation of the limb came on immediately after the operation, followed by extensive suppuration, and the patient died on the thirty-first day. December, 1836. *Dr. Winslow Lewis.*

317. Disease of the ankle-joint; regarded by Dr. T. as fungus hæmatodes. Preserved entire in spirit, having never been dissected. "The patient was kicked by a horse about two years before the amputation; the part remained indurated ever after until a tumor of a bluish color formed, which was opened and discharged blood; a sinus, about an inch deep, remained for many months, from which blood constantly oozed, until a fungus started up and ulceration ensued with a very fœtid discharge, and the limb was amputated."

*Dr. S. D. Townsend.*

318. Anchylosis of the knee-joint; not bony. From a man, aged forty-eight, who entered the Massachusetts General Hospital with phthisis, October 10th, 1838, and died on the 21st of November. Before dissection the knee seemed but little if at all enlarged, and, by using great force, it was thought that a very slight motion of the joint was perceived, though this was quite doubtful. The cavity of the joint was entirely obliterated, the bones being closely connected by a compact cellular tissue, which has been cut through; nowhere any union by bone; no disease, apparently, in the integuments, ligaments, or ends of the bones. A wet specimen, and preserved in an open jar, so that it can be removed and examined. On his admission into the Hospital, the patient reported that two years previously, without unusual exertion or exposure, he felt severe pain in the left knee, which on the following morning was stiff, and remained so ever afterwards. It was very painful for the first six months, so that he was unable to bear the least weight upon the limb, and was mostly confined to his bed.
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## IV. HEART AND BLOOD-VESSELS.

319. Old and almost universal adhesion of the pericardium. From a little girl, four years of age, who died of croup supervening on acute pneumonia; was never known by her physician, Dr. C. T. Hildreth, nor friends, to have had any cardiac symptoms, and was not troubled by going up stairs or rising ground. 1834.

320. A large, thick, ossific plate over the left ventricle of the heart, extending from the base downwards, and equal to about one inch and a quarter square; a similar plate extends nearly round the base, but much narrower than the above, and very irregular; these were found to be entirely external to the organ, except at one point, where they dipped into its substance. There were almost universal, old adhesions of the pericardium, and the ossific deposit seemed to be in the false membrane. The heart was of about the usual size; mitral valve opaque, indurated, and somewhat ossified, the passage being very much contracted; some ossification of aorta and valves; otherwise healthy. The whole organ has been dried, to show the ossification upon the external surface.

From a man, aged sixty-four, a patient of Dr. A. A. Gould. Suffered severely from rheumatism thirty years before death, from which time he had more or less dyspnœa and palpitation. Hemiplegia of right side ten or twelve years before death, leaving the right leg excessively œdematous. Dr. G. was called to him for an attack of severe dyspnœa; had not laid down for two nights; pulse rapid and feeble, but regular; was relieved by cathartics, &c., and in the course of the month was able to join his family, the pulse meanwhile becoming very irregular. Soon began to fail again, and died in the course of a few weeks. No remarkable sounds ever heard in region of heart. 1839.

321. Fœtal heart injected.

322. Interior of the fœtal heart; the cavities were filled with tallow,

- which was afterwards melted out, and the organ was then dried and cut open. *Dr. J. B. S. Jackson.*
323. An injected preparation, to show the fœtal circulation. The heart and blood-vessels have been dissected away and mounted, not merely the organs but the trunk itself having been removed; the form of the left auricle, and the small size of the pulmonary veins, which are not usually seen in these preparations, are thus shown. A small, supernumerary artery arises from the arch of the aorta. *Dr. J. B. S. Jackson.*
324. An injected preparation of the arteries of an entire subject; a child about a year and a half old. *Dr. Charles T. Jackson.*
325. An injected preparation of the arteries of the upper extremity. *Dr. Charles T. Jackson.*
326. Casts of the interior of the right auricle and left ventricle of an adult heart.
327. Casts, in wax, of the interior of all the cavities of an adult heart. *Dr. George C. Shattuck, Jr.*
328. Foramen ovale largely open, but valvular. A dry preparation. From a lady, a patient of Dr. J. M. Whittemore, of Brighton. She had never had cardiac symptoms, but enjoyed perfect health, and died of acute inflammation of the articulations of the pelvis, with phlebitis, after confinement. Such an opening as existed in the present case seems to be not at all infrequent. 1837.
329. A very large and direct communication between the auricles of the heart, in the situation of the foramen ovale. The septum only has been preserved, and having been very carefully dried, it shows exactly the size and form of the opening, as represented in Fig. 1. The patient was a shoemaker, and died of phthisis at the age of twenty-five years; he was about six feet in height, moderately fleshy, and in infancy was thought to be very robust, but began to be less so when he was

about four years old. The heart having been sent to the Society in a recent state, the right auricle was found to be very much dilated, the right ventricle dilated and hypertrophied, with some opacity and thickening of the lining membrane and tricuspid valve, the pulmonary artery large, the left auricle much smaller than the right, the mitral valve thickened and opaque, and the left ventricle small, being nowhere five lines in thickness. *Dr. Joseph Osgood, of Danvers.*

330. A second specimen similar to the last; the communication, however, between the auricles is still larger than in that case and equally direct. The septum has been carefully dried, and the size and form of the opening, as it appeared in the recent state, is accurately represented in Fig. 2; in each case the opening is seen to be traversed by a narrow slip of membrane.

The patient was a married lady, twenty-nine years of age, and died in this city, November 26th, 1840. She had had palpitation from the age of one or two years, and when she was about eight years old this increased, but was attributed, with a general debility, to her rapid growth. Her health afterwards improved, but she suffered much from violent exercise, her habits being active. About seven years before her death she was married, and soon afterwards removed to North Carolina, where she enjoyed good health, except for the cardiac symptoms, which never left her. In July, 1839, she was confined in this city, and was attended by Dr. George B. Doane, who heard nothing of any affection of the heart till about three weeks afterwards, when he was suddenly called on account of an unusual palpitation, which, however, had nearly ceased when he arrived; on examination, the organ appeared to be greatly enlarged, but, as she had suffered from the disease for so long a time, and appeared to think so little of it, nothing was done, and in a day or two she was as well as usual. In October she returned to the South, and met with a number of disasters, after which her health began seriously to decline. In July, when she returned to this city, she had cough, dyspnoea, and increased trouble from going up stairs or rising ground; the pulse regular when at rest, but at other times irregular and intermitting, though not greatly so; a bellows-sound was heard by Dr. Shattuck, Jr., who attended the case

for a time; ascites and œdema had existed since April, and for the last four weeks she was confined to the house. In her figure, this patient was tall and well formed, though not fleshy; complexion pale and sallow, but her friends had never noticed any lividity, and Dr. D. never saw any, except just before her death.

On dissection, about two pailfuls of water were found in the cavity of the abdomen, and a gill or more in that of the pericardium. Heart very much enlarged; right auricle and ventricle hypertrophied and greatly dilated; pulmonary artery much dilated, measuring four inches and a quarter in circumference; left auricle rather large, but very much less so than the right; mitral valve somewhat thickened and opaque; left ventricle and aorta healthy.

331. Foramen ovale open, from a female, aged seventy-five, a patient of Dr. John Homans. The opening, as represented in Fig. 3, is one-third of an inch in diameter, and looks as if a piece had been punched directly out. The patient died from encephaloid disease in the abdomen, and for the last four years had had dyspnœa on going up stairs, with inability to lie upon the left side. A portion of the septum between the auricles has been cut out and dried, the heart being otherwise healthy. March, 1845.

332. A small interventricular opening, situated, as usual, in the upper part of the septum, and apparently just below the origin of the aorta; from a boy, eleven years of age. The whole heart is preserved, and is much enlarged; parietes of right ventricle and columnæ excessively thickened; left ventricle rather thin than otherwise; "entrance to the pulmonary artery indurated, and small as compared with the size of the artery; opening of the foramen ovale about one-fourth of an inch in diameter; ductus arteriosus open sufficiently to admit a small probe." This patient was healthy at birth, and for the first ten days, when he took cold, became emaciated, and remained so during the first year. He afterwards became corpulent, and continued so till his death; extremities comparatively small; suffered much dyspnœa and lividity on motion, was much affected by cold or heat, and when he cut himself, the blood was observed to look like molasses. As he grew older his general

health improved. The night before his death he went to bed as well as usual, but there soon came on vomiting, followed by insensibility, with symptoms of apoplexy, and in three hours he died. On examination  $\xi$  ij. or  $\xi$  iij. of blood were found extravasated in the head, and all the ventricles were filled with coagula, particularly the fourth. This case was published in the New England Medical Journal for 1816, by

*Dr. Robert Thaxter, of Dorchester.*

333. Interventricular opening, from a male infant, aged twenty-one months, a patient of Dr. J. Bigelow. Dr. B. had always noticed a tumultuous action of the heart, and, whenever examined during the last year, a loud bellows-sound; some dyspnoea; color generally florid; moderately fleshy; died of extensive, acute meningitis, not tuberculous. Heart enlarged and remarkably rounded; right ventricle much thickened; opening in the septum just below the aortal valves direct, rounded, and large enough to admit the tip of the little finger, the edge towards the septum being thick and smooth. The pulmonary artery is small, rather thick, and has only two valves, which are thick and rigid; for about half an inch before the origin of this vessel the cavity of the ventricle is contracted, and is in part lined by a dense, white tissue, which extends towards the interventricular opening and the aortal valves, giving it somewhat of a cicatrized appearance. The heart and vessels were otherwise healthy, and in the preparation the valves and greater part of the ventricles have been cut away. 1840.

334. Interventricular opening, from a lady aged twenty-three. From birth there had always been something peculiar about the heart; the nurse noticed an unusual throbbing within the first month; action violent and irregular in infancy, and continued so as long as she lived, being much increased when she was slightly indisposed, the heart at such times stopping oftener and longer, as she expressed herself; throbbing also much more violent when in bed. By her friends this affection was regarded as nervous, as her general appearance was that of perfect health; complexion very fair, and usually florid, but with some lividity when excited. She was married about

a year before her death, and bore one child, without any marked increase of the cardiac affection. On the morning of the sixth day after her confinement active hæmoptysis came on; in the evening it returned, and on the following morning she died.

On dissection, the heart was found much enlarged, weighing about twenty-two ounces, (avoirdupois); quite firm; apex rounded. Auricles rather large; foramen ovale largely open, but valvular. Right ventricle much dilated and hypertrophied, being nearly seven inches in length on the outside; parietes six lines at the thickest part, and the columnæ in proportion. Opening in the septum, just below the aortal valves, about three-fourths of an inch in diameter. The pulmonary artery arose from a regular prolongation from the right ventricle, seven or eight lines in diameter and four in extent; at the origin of this prolongation was some soft, cellular tissue, and somewhat higher up were three little ridges of whitish, condensed, cellular membrane, of a semilunar form, the convexity being upwards towards the pulmonary artery, and appearing altogether as if they might be the valves misplaced and atrophied; two of them are on one side of the vessel, and the third, which is most distinctly seen in the preparation, is by itself upon the opposite side. At the origin of the pulmonary artery from this prolongation, was a sacculated appearance, as if there had been an attempt to form valves where they were most needed; at this last part the vessel was two inches and seven-eighths in circumference; seven lines higher up, where there was a marked constriction, it measured one inch and a half, and about half way to the bifurcation it increased again to two inches and two-thirds. The ductus arteriosus was one and a half lines in diameter, where it was cut across, but the connection with the aorta was not preserved, when the heart was removed. Left ventricle dilated and hypertrophied; length six inches, and maximum thickness eight lines. In the preparation, all the points above described are distinctly shown. 1838.

*Dr. J. Stimson, of Dedham.*

335. Septum between the ventricles entirely wanting; from a young man, aged twenty-one; he was of medium size as to height and flesh; face and nails always very blue, and he was very

sensitive to cold; dyspnœa and palpitation on quick motion, yet he was able to go about, and was employed to go of errands at the Salem Alms-house, where he died of phthisis, the duration of his pulmonary disease being about one year; was out of doors until a short time before his death. The organ had been in spirit for some time when it was sent to the Society, but appears to have been small. Right ventricle thicker, and the left thinner than natural, and without the slightest trace of a septum between the two. Mitral and tricuspid valves sufficiently developed; the last has been cut away. Pulmonary artery small; it arises directly from the ventricle, and has but two valves, which are best seen on the back of the preparation. The aorta is of proper size, and has three valves; it arises from a large and well marked prolongation from the common ventricle, and which seems to belong as much, if not more, to the right side of the heart than to the left. 1838.

*Dr. Benjamin Cox, of Salem.*

336. Interventricular opening, the pulmonary artery and aorta arising from the right ventricle. From a young Spaniard, aged eleven years; had had cardiac symptoms from infancy, and would sometimes throw himself on the floor to get relief; was well nourished. The heart was enlarged, firm, and rounded. Right auricle somewhat dilated and hypertrophied; foramen ovale open to about three or four lines, and scarcely valvular. Tricuspid valve a little opaque and thickened. Left auricle well, except for thickening and opacity of lining membrane. Mitral valve well. Cavity of left ventricle rather small; parietes thin, measuring nowhere more than four lines. Opening at the upper part of the septum between the ventricles two-thirds of an inch in diameter. Cavity of right ventricle not dilated; parietes from three to four lines in thickness on an average, and eight at the thickest part. The aorta and pulmonary artery arise, side by side, directly from the cavity of the right ventricle; the first is one inch and ten lines in circumference at the valves, and the second two inches and a half; a few opaque, whitish spots in both, above the valves, but otherwise not remarkable; ductus arteriosus closed. 1837.

*Dr. J. Bigelow.*

337. A four-valved pulmonary artery; from an adult subject. The valves are of about equal size, but somewhat reticulated.  
*Dr. Henry I. Bowditch.*
338. A second specimen, one of the valves being quite small. A dry preparation. 1847. *Dr. J. B. S. Jackson.*
339. Pulmonary artery arising from the aorta; the heart and vessels are preserved. From a child, aged five months, a patient of Dr. George Hayward. It had always been feeble, and the chief, and often an urgent symptom, had been dyspnoea; the impulse of the heart was increased, there was no marked lividity, and it died rather suddenly, September 11th, 1842. The heart was very much enlarged, especially on the left side; maximum thickness of right ventricle three lines and a half, and of the left four lines. All of the valves appeared thickened, and firm, the mitral and tricuspid being very narrow. Interventricular opening sufficiently large to admit the end of the little finger. The aorta at its origin was quite large, and soon gave off two pulmonary branches, close together, and of full size; it also continued rather large to the arch, where it gave off the left vertebral, besides the usual branches.
340. The heart of an "acephalous fœtus," which was sent to the Society by Dr. Josiah Noyes, of Needham. The aorta is impervious at its origin, and the ascending portion is no larger than the innominata. The pulmonary artery and its branches, and the vessels at the arch of the aorta are of full size. The left auricle is not much if at all smaller than usual, but the left ventricle would hardly contain two drops of fluid; there are traces, however, of the mitral valve. The right auricle is not remarkable, but the cavity of the ventricle is as large as that of both together usually would be. 1842.
341. The heart of an "acephalous fœtus," which was sent to the Society by Dr. Milton Fuller, of Medford. The pulmonary artery is impervious at its origin; the common trunk, as it is usually called, is not more than a line in diameter, and the pulmonary branches, which are quite small, arise, with this trunk, almost directly from the aorta, there being no proper

ductus arteriosus. The two ventricles are sufficiently developed, and there is a free communication between them, the aorta arising from the right rather than from the left. In the preparation, the lungs are preserved in connection with the heart. 1845.

342. The heart of a new-born child, showing an impervious condition of the pulmonary artery. The trunk of this vessel is small, but the branches are about as large as usual, and the ductus arteriosus has begun to close. The cavity of the right ventricle is exceedingly small, whilst that of the left, from its great size, is equal to the two in the normal state, there being no communication between them; it differs then materially from the last specimen, and is analogous to the one preceding. The right ventricle, however, does not terminate at once, as the left does in No. 340, but sends off a prolongation which becomes gradually smaller, and winds round behind the pulmonary artery, so as at last to appear in front between this vessel and the aorta; there it was accidentally cut off, being only large enough to admit a very small blunt pin. In the auricles nothing unusual was observed, except for an absence of the Eustachian valve; tricuspid valve distinct, though very imperfectly developed; aorta of about the usual size, and not remarkable, except for a supernumerary artery between the left carotid and subclavian.

This case occurred in the practice of Dr. Enoch Hale. The subject was a large and finely developed male child; born at the full period, and lived about twenty-nine hours; the color of the face was quite dark, and for several hours before death it kept up a weak, plaintive, moaning sound. 1841.

343. Ductus arteriosus open; from a male, twin child, aged twenty months, a patient of Dr. G. H. Lodge. When two or three days old it was observed to breathe very rapidly, and the respirations went on increasing till about the age of six months, when the number amounted to fifty or sixty in a minute, and so continued ever afterwards, being the most prominent symptom in the case; the breathing was laborious during sleep, but there was no apparent dyspnoea when awake. General appearance delicate; skin very clear, but never in the slightest

degree livid ; pulse regular. The affection of the heart was never suspected, and it died after an illness of three days, apparently from a slight pulmonary affection. On dissection, the heart was found enlarged, firm, rounded, and full of coagula. Right ventricle hypertrophied. The pulmonary artery was large, and the ductus arteriosus formed a direct, regular, rounded opening into the aorta, one line in diameter. When dissected in situ, the pulmonary artery appeared more like the origin of the descending aorta than the aorta itself. Left auricle dilated and hypertrophied ; foramen ovale closed. Left ventricle hypertrophied, but not dilated, the maximum thickness being six lines. Organ otherwise healthy. The aorta was rather small at its origin, and still more so beyond the vessels at the arch ; at the entrance of the ductus arteriosus it appeared externally contracted, and internally there was a little ridge as if it had been girt at that part ; immediately afterwards the vessel became again considerably enlarged. In the preparation the pulmonary artery and the aorta only are preserved. 1838.

344. Supernumerary artery, about the size of the vertebral, arising from the arch of the aorta between the left carotid and subclavian. An injected preparation.

345. A preparation, showing the right subclavian artery arising from the aorta beyond the left subclavian, and passing behind the œsophagus. The arteries and the œsophagus are injected, and are colored, the first red and the last blue ; the trachea is also preserved, and is colored white. From a child. 1841.

*Dr. J. B. S. Jackson.*

346. Wound of the right ventricle of the heart ; it is an inch and a half in length, and to the extent of half an inch, has penetrated quite through into the cavity. The patient was stabbed in the side with a penknife, and died in about fifteen minutes.

*Mr. Thomas Restieaux.*

347. Disease of the mitral valve. From a man, aged thirty-two, a patient of Dr. A. A. Gould ; had been subject to rheumatism for some years, with lividity of surface. Dr. G. was called to

him in the night, and found him laboring under very urgent dyspnœa; the whole surface was livid; pulse not less than 180; impulse of heart very violent; thirst urgent. Had been at work on the day before, which was very cold, and the attack came on as he was returning home. He was bled without any effect; immediately after the operation of an enema, however, he felt great relief, and this continued, but he sank, and died on the following day. On dissection, there were found universal, old adhesions of the pericardium. Heart much enlarged, and distended with blood. Right auricle and ventricle dilated and hypertrophied, with some disease of the tricuspid valve. Pulmonary artery dilated. Lining membrane of left auricle opaque, dead white, and much thickened. Mitral valve opaque, thickened, indurated, and somewhat ossified; passage so much contracted as only to admit the tip of the little finger; chordæ tendineæ much thickened, dense, and opaque. Left ventricle somewhat thickened and dilated. Aorta healthy; valves united at their edges, opaque, whitish, much thickened, and indurated, though not ossified. In the preparation the mitral valve has not been cut through, and the disease is very distinctly shown, the rest of the organ having been cut away.

348. A dried preparation, showing an extensive ossification of the mitral valve, columnæ carneæ, aortal valves, and coronary arteries. There were old adhesions of the pericardium, and great hypertrophy of the left ventricle. From a female, aged sixty-four, a patient of Dr. John Homans; subject to rheumatism; cardiac symptoms for about two years; greatly troubled by an irregular agitation about the heart rather than proper palpitation; dyspnœa, much increased by rising ground; faintness at epigastrium was one of the chief symptoms. Over the heart a bellows-sound was heard, and to a considerable extent an irregular, tremulous motion instead of the regular action, and the same was communicated to the radial artery. Three weeks before death, after a long walk in the rain, there came on acute pneumonia, of which she died.

349. A dried preparation, showing ossification of the mitral and aortal valves, and of the coronary arteries. The left ventricle

was thickened, and somewhat dilated; lining membrane of left auricle thickened and opaque. From a female, aged sixty-six, a patient of Dr. Edward J. Davenport; chronic catarrh for ten years; much loose cough, with wheezing; dyspnœa, increased by exercise and especially by rising ground; pulse intermittent and very irregular; ascites and anasarca for some months before death; died of apoplexy. A large clot of blood was found in the left anterior lobe of the brain, and the arteries at the base were ossified.

350. The tricuspid valve dissected out and dried, showing an ossific deposit, about the size of a small pepper-corn, in the free edge of the valve, and two others, about as large, just where the chordæ tendineæ are inserted into the ventricle. The valve was otherwise quite healthy, and the heart generally was sufficiently so. The patient, a negress, aged fifty-eight, died at the Alms-house, January 12th, 1845, of disease of the lungs and pleura, but without cardiac symptoms, so far as was known.

351. Vegetations on the aortal valves.

*Dr. Charles H. Stedman.*

352. Extreme ossification of the aortal valves, from a patient of Dr. J. Bigelow. Two of the valves are intimately connected, if there were ever more than two, and they form, altogether, a narrow, semilunar slip, which, in the recent state, would hardly allow a probe to pass, the specimen resembling very much one that is figured by Dr. Baillie in his work on Morbid Anatomy, (Pl. 2, fig. 3.) A dry preparation, the valves only being preserved. A blackish, carious cavity, one or two lines in diameter, is also shown in the ossific mass, the same having been observed in an ossified mitral valve recently presented to the Society. The left ventricle of the heart was hypertrophied, with dilatation of the ascending aorta, and some disease of the tricuspid and mitral valves.

The patient was a gentleman, seventy-six years of age, who died of acute pleuro-pneumonia. He had been remarkably regular in all his habits, and his family knew nothing of cardiac disease, though for about two years he had had palpitation and dyspnœa, which were increased by exercise. During his

last sickness Dr. B. found the pulse exceedingly irregular, and a loud bellows-sound in place of the first sound of the heart. 1843.

353. Left ventricle much dilated, and the parietes rather thin. Right ventricle not affected. From a little girl, about six years old, a patient of *Dr. A. A. Gould.*

354. Immense dilatation of the left ventricle, the parietes being of about the usual thickness; the right ventricle appears exceedingly small by its side; aorta much diseased, but nowhere contracted. The whole organ is preserved. From a man, aged forty-four, a patient of Dr. Charles T. Hildreth. Cardiac symptoms for five years; pain and oppression in region of the heart, with much palpitation and dyspnoea; no lividity; pulse not remarkable. There was extensive dulness on percussion in cardiac region; impulse of heart and sound very much increased, this last being sometimes heard at a distance from the chest. Died in a fit of epilepsy, to which disease he had been subject for the last ten years, nothing unusual being found in the head but extreme congestion.

355. Aneurism of the heart. The patient was a bookseller in this city, aged sixty-seven, tall, thin, pale, regular in his habits, and of excellent character. About ten years before his death he had an attack of what was regarded as pericarditis, for which he was bled, and from that time he had suffered from dyspnoea on exertion. On the 5th of December, 1843, he sent for Dr. John Ware; the dyspnoea was considerable, with palpitation on exercise, so that he could not walk to his store, which was at the distance of a quarter of a mile; ancles œdematous, as they had occasionally been during the past year; dry, tickling cough for a week or more. Impulse of heart considerable, and in lower cardiac region towards sternum the stroke was impulsive and tremulous, like that of a steam engine; first sound muffled, second distinct. Pulse 72 to 80, not thumping, but rather tremulous. Could lie down as usual, and upon either side, but could not go up stairs without suffering. Countenance changed, but thought he had not lost flesh. From the above date till his death, which occurred on the 15th of the

same month, after a paroxysm of six hours duration, he suffered much from dyspnoea and distress in the cardiac region; his countenance was very pale, and he looked and expressed himself as feeling perfectly exhausted; rode once to his store, though he could move but a few steps without dyspnoea; pulse about 96, and always thrilling.

On dissection, there were found two large white patches upon the ventricles of the heart, which were regarded as the effect of the pericarditis above alluded to. The organ itself was of about the usual size, but at the apex looked rounded, felt stiff, and crackled under pressure, like an ossified aorta; there was no distinct external tumor, however. The left ventricle was then cut open, and was found to be dilated at its apex into a regular, rounded, well-defined cavity, about the size of a pullet's egg, the parietes of this cavity being thin, opaque, and degenerated in structure, precisely like an ossified and otherwise diseased artery. The blood in the cavities of the heart was not remarkable, and the organ otherwise was sufficiently well. Some ossification at arch of aorta, some serous effusion in lungs and in pleural cavities, and some disease of the liver with calculi in the gall-bladder were found, the other organs being healthy.

In the preparation the whole heart has been preserved, the left ventricle being distended so as to show the interior of the aneurismal cavity.

356. Tubercles in the right ventricle of the heart. Two white, opaque, curdy masses, well-defined, and quite prominent, one upon the external, and the other on the internal surface; the first is four lines in diameter, and the other about two-thirds as large. Organ otherwise healthy. Tubercles were also found in most of the organs of the thorax and abdomen. From a black child, five years of age, a patient of Dr. M. S. Perry; no symptoms particularly referrible to the heart. 1839.
357. Organic disease of the heart; fibrine, upon the inside of the left auricle, becoming organized, with some ossific deposit. The patient was a female, aged forty-one, and had been under the care of Dr. Charles E. Ware; was first seen by him for hæmorrhage from the bowels, in November, 1836; at that time

she became very livid on the least exertion; had had dyspnœa and palpitation, with œdema of the feet, for many years; pulse felt at wrist, but could not be counted; sounds of heart audible in every part of chest, the second being the loudest, but without any abnormal sound. The hæmorrhage was relieved, and she was not seen again till January, 1839; had been pretty comfortable, and about her business till five weeks previously, when the dyspnœa and palpitation became more urgent, with lividity on motion, as before, and great œdema of lower extremities. Physical signs and pulse as before; impulse of heart strong; both sounds distinct, and without bellows murmur. In the course of February there came on effusion in the chest, and she died suddenly on the last day of the month.

On dissection, the heart was of about the usual size. Right auricle and ventricle somewhat hypertrophied, but the left ventricle decidedly small and thin. Mitral valve much thickened, and condensed, with considerable ossification, the passage appearing as a narrow slit, into which the tip of the little finger would scarcely enter. Some dilatation of pulmonary artery and aorta, with ossification of the last, the valves being healthy. The lining membrane of the left auricle had an opaque, white, thickened, soaked appearance. Upon the inner surface of this last cavity was a thin layer of fibrine, from half a line to a line in thickness, and in extent three inches by from one to one and a half inches; appeared at first sight unorganized, though evidently formed before death; free surface generally rough, and somewhat colored by blood, but towards the edges smooth, polished, and lost in the surrounding membrane, though the line of demarcation was sufficiently distinct; separated very readily for the most part, and the inner surface of the auricle appeared then as it did elsewhere. Just as the fibrine was about to terminate in the surrounding membrane, but distinctly in its substance, and very near to the cut edge, there was a well-formed, ossific plate, measuring one line by one and three-fourths, and perfectly resembling those which are so often found on the inside of the aorta; there was also another similar plate, three and a half lines in length by one to one and a half lines in width, at some distance from the first, and apparently in the substance of the fibrinous deposit just before it was lost in the inner surface of the auricle; both of these

may be seen in the preparation. The under surface of the fibrine, where it was stripped up, was unequivocally vascular, the appearance being compared to that of an inflamed conjunctiva; there were distinctly seen by the naked eye, though still more with the aid of a lens, small vessels ramifying and inosculating with each other, and filled with red blood, which moved freely about as the position of the parts was altered, the surface generally not being red; numerous very delicate filaments passed from the fibrine to the inner surface of the auricle, but into these the blood could not be made to enter. In the preparation the left auricle and the mitral valve only are preserved, showing the fibrinous deposit and the ossification in its substance. 1839.

358. A large tumor in the cavity of the left auricle of the heart; perhaps of a malignant nature. From a female, aged sixty-two, a patient of Dr. William Ingalls; had had disease about the elbow for the last seven years, confined to the soft parts, and forming a mass at the time of death as large as the fœtal head and of a highly malignant appearance. Pulse always regular; generally full and strong, but of late had lost this character; frequency not remarkable. Some oppression about chest, and cough towards the last; kept about till the last month, and was confined to her bed for a few days only.

The examination after death was made by Dr. Winslow Lewis, who sent the specimen to the Society. The tumor was about the size of a pullet's egg, of a rounded form, uneven on the surface, having the consistence of fibrine, and light colored, though not white like the disease in the lung, and not perfectly opaque; no encephaloid nor scirrhus appearance, so far as could be seen without cutting it through. The mass hung perfectly loose in the cavity of the auricle, being suspended by a prolongation which extended about half an inch into the pulmonary vein from the left lower lobe, and adhered to its inner surface; no prolongation into the vein from the upper lobe, nor was any disease found in the branches of the pulmonary artery. The heart itself was perfectly healthy. In the lower lobe of the left lung was a mass of disease, about two inches in diameter, peculiar in its appearance, but undoubtedly of a malignant character; this was not connected with the pulmo-

nary veins, so far as could be ascertained. Two or three other similar masses were found in the same lobe, about six or eight lines in diameter, one of them hanging pendulous from the external surface of the lung.

The left auricle of the heart and the greater part of the lower lobe of the left lung are preserved, showing the disease in each, and, two or three of the branches of the pulmonary vein being cut open, the prolongations from the tumor are distinctly seen. Cruveilhier (*Anat. Path.* liv. xxix.) figures a "polypiform cancer" in the right auricle, the heart not having been suspected during life.

359. Ossification of the coronary artery, from an old gentleman, who for many years had been subject to embarrassment about the heart, with irregular pulse. The heart itself was much enlarged, but the artery only has been preserved. 1837.

*Dr. J. B. S. Jackson.*

### III. ARTERIES.

360. A coagulum in the femoral artery, from a patient who died a few days after amputation of the thigh. *Dr. J. H. Lane.*

361. Inflammation of the iliac and femoral arteries. From a female, aged thirty, who entered the Mass. Gen. Hospital Aug. 28th, 1838, for hemiplegia of right side. About a week before death a diffused redness was noticed over the lower part of the left leg and top of the foot; this disappeared, and returned several times, but for the last four days was constant, and accompanied with swelling, though without heat or any indication of pain.

On dissection, there was found a well-defined, livid redness of the lower third of the left leg and top of foot, with considerable serous infiltration; there was some redness, also, about the right knee. The left hemisphere of the brain was extensively softened, and upon the mitral valve were numerous and large vegetations.

The iliac arteries, on both sides, were plugged up with a mixture of fibrine and coagulated blood, extending into the aorta about an inch, into the upper part of the right femoral

artery, and far down the femoral on the left side. In the left groin, where the disease was most advanced, the fibrine was softened and mixed with a substance like thick pus, some appearance of this last being also found in the iliac arteries. Before being cut open, the vessels appeared contracted, and had a corded feel; parietes very little if at all thickened; fibrine and coagulum separated readily, leaving the inner surface perhaps a little rough, but not red, the experiment being made in several places. In the preparation, the left iliac arteries and the femoral, part of the right iliac, and the lower part of the aorta are shown; the disease is seen to have extended into the profunda, and one of the femoral veins is similarly affected. Having been put directly into alcohol, the color of the coagulum is somewhat preserved.

362. Several dried specimens, showing very extensive ossification of the aorta and smaller vessels; from different subjects.

*Dr. J. B. S. Jackson.*

363. Complete ossification of the arteries of the leg and lower part of the thigh, from a case of extensive gangrene of the extremities. The arteries have been dissected out, dried, and displayed upon a black-board. The patient was a negro, aged sixty-one, and had been under the care of Dr. Ebenezer Alden, of Randolph. In September, 1839, he had pretty severe pain in the left great toe; this soon vesicated, the end dried up, and became quite black, and from that time the gangrene gradually extended up the foot and leg. When Dr. A. first saw him, in October, the arteries everywhere felt hard; pulsation not strong in carotids, still less so in axilla and groin, and in the wrists it could never be felt. The cardiac region was enlarged, and, on percussion over the heart, the resonance was very loud and tympanic; impulse not felt, but the sounds of the heart were distinct, though they seemed distant; these observations were frequently repeated. No palpitation nor dyspnoea. For the last two months the left lower extremity was gangrenous as high as the knee; right foot and lower half of leg also gangrenous for some months, and for about two weeks before death the hands and part of the fore-arms had become shrivelled and dried up. The patient had pain, but Dr. A. could not

ascertain how much, as he never made the least complaint. Died of acute pneumonia, in July, 1840.

After death the left lower extremity was removed four inches above the knee-joint, and brought to the city for the use of the Society; the heart also was removed. Foot perfectly black and dry as a mummy's, the integument having separated from the dorsum. Ankle-joint largely open, and the tibia and fibula exposed to a considerable extent. Surface of leg black, but less so than the foot; muscles and tendons of lower half exposed to a great extent, soft, very pale, and surrounded by a yellowish, viscid pus, but towards the upper part more healthy. Posterior tibial nerve at ankle quite large and infiltrated with pus. Arteries carefully dissected out, and found completely ossified, except to a small extent in the ham, as shown in the preparation; Dr. A. found the femoral higher up in the same condition. Charcoal, creosote, &c., having been freely used, the parts were not very offensive.

On examination of the chest, to ascertain the cause of the physical signs above referred to, Dr. A. found the cavity of the pericardium very large, and as if distended with air, though it was not ascertained, on puncturing it, that this was actually the case; quantity of serum small. Heart healthy, except for slight ossification of one of the columnæ in left ventricle; large quantity of fibrine in all of the cavities, and especially in the ventricles. In the thoracic aorta, which has been preserved, there was scarcely a trace of ossification, notwithstanding the condition of the smaller vessels; valves healthy. As the immediate cause of death, there was found an extensive purulent infiltration in one of the lungs.

364. Rupture of the aorta into the pericardium, from a man who dropped dead in the street; a patient of Dr. Henry G. Clark. "Nothing known of his history, except that he was intemperate, and had not made much complaint. The cavity of the pericardium was found filled with blood; heart large, and the left ventricle dilated and hypertrophied." The ascending aorta only is preserved, and is seen to be generally somewhat diseased, though not ossified. The perforation is one-fourth of an inch above the valves, quite small, and situated at the bottom of something like an ulceration two or three lines in diameter, the corresponding portion externally being thickened, and

decidedly softened. Near the perforation, and upon the inner surface, are two small diseased spots, probably an early stage of the same process. Cruveilhier remarks (*Anat. Path.* liv. iii.) that the arteries, and especially the aorta, burst not unfrequently from structural change, and without previous dilatation. 1827.

365. A second specimen of rupture of the aorta into the pericardium, from a patient of Dr. John Jeffries. The artery is greatly diseased, and more or less dilated, measuring at the arch, when cut open, from five to six inches across. About two inches and a half above the valves there is a ragged laceration, large enough to admit the end of the finger, the parietes of the vessel about the rent being completely disorganized. The cavity of the pericardium contained about a pint and a half of blood. The heart was healthy, but the valves of the pulmonary artery were considerably perforated, and those of the aorta were somewhat diseased. In the preparation the artery only has been preserved. The patient was a gentleman, sixty-one years of age, always very anxious about himself, and had had occasionally, of late, a "catching pain" about the region of the heart, but no other cardiac symptoms, so far as was known. For many years he had been much addicted to the habit of smoking, and to the use of strong coffee, and as a consequence probably, he had been subject to a remarkable tremor of the hands. His death was at last almost instantaneous. 1846.

Since the above case two others have occurred in this city, and both upon the same day. One of the patients was a gentleman, aged fifty-one, who had had cardiac symptoms, but was about his business, when he dropped dead; the laceration was large, but the aorta was no more diseased than it often is in one of his age. The other was a black woman, aged about ninety, and regarded as healthy for her years; she also died instantly, but the aorta in her case was much dilated and diseased, though the opening was a mere pin hole. Both specimens were shown at the same meeting, (January 11th, 1847.)

366. Laceration of the aorta just above the valves. From a man, aged forty-one, a patient of Dr. Sylvanus Plympton, of Cambridge. After a hearty dinner of baked beans he went to the

printing office, where he worked, but vomited freely, and was obliged to return home. The vomiting continued most of the night, and on the following morning he had nausea, distress at the præcordium, an anxious countenance, and a small but regular pulse; Dr. P. was called, and regarding it as a case of disordered stomach, ordered a purgative of calomel and jalap. At eight, A. M., he was left alone for twenty minutes, and, on returning to his room, the attendant found him dead. The dissection was made by Dr. Morrill Wyman, who sent the specimen to the Society. The laceration was transverse, ragged, and involved about two-thirds of the circumference of the vessel. The coats of the ascending aorta were very extensively separated by the blood which had been forced in between them, and which had been driven along the parietes of the right carotid and subclavian arteries. Just beyond the left subclavian was a second, recent, transverse laceration of the inner coat of the aorta one inch in extent, and evidently formed by the blood, as it burst through into its former channel. If the patient had lived, then, the case would have resulted in one of dissecting aneurism. Some chronic disease of aorta exists, but not more than is often found. The pericardium contained probably not less than  $\text{zviij}$ . of yellow fluid, but no blood, though there was a considerable effusion of this last into the loose cellular membrane about the origin of the aorta and pulmonary artery. Left ventricle dilated and hypertrophied, but the heart was otherwise sufficiently well. In the preparation, the aorta and its branches only are shown.

This case differs in two very important points from several which have been published by Prof. Rokitanski, of Vienna, (*Encyclographie des Sc. Med.*, April, 1840,) also from one by Cruveilhier, (*Anat. Path. liv. xx.*) and one by Dr. Boyd, (*Edinburgh Jour. of Med. and Surg.*, April, 1841); in nearly every one of these the blood was effused into the pericardium, as might be expected, and in no one is there stated to have been a second laceration or re-opening into the aorta.

One other case, similar to the above in the circumstance of there being no rupture into the cavity of the pericardium, occurred in November, 1842, in the practice of the late Dr. Charles O. Barker, of Lynn, who sent the specimen to the Society, with a history of the case. The laceration was just

above the valves, and opened into a large cavity, which was filled with blood, and formed upon the outside of the aorta by a detachment of the serous membrane. The heart itself was healthy, and there were only traces of chronic disease in the aorta and pericardium. The patient was a lad, nineteen years of age, who had previously been regarded as healthy, and died, after an illness of five hours, with great distress in the region of the heart.

367. Dissecting aneurism. The false passage commences near the origin of the aorta, and, as in the last case, opens into the arch just beyond the left subclavian artery; the transverse diameter, inferiorly, is nearly two inches, but, at the outlet, it diminishes about one-half, the septum, which was at first quite thick, becoming very thin. Below this passage the lacerated edges are separated to some extent, and the external portion of the artery is much dilated, terminating in a broad but shallow aneurismal pouch just above the valves. Circumference at the valves four inches, and at the dilated part more than seven. The inner surface of this last, and of the false passage has a cicatrized appearance, showing the chronic nature of the affection, and the cavity of the false passage is traversed by bands resembling the chordæ tendineæ of the heart. The true inner surface of the ascending aorta is nearly healthy, as are also the valves, though in the descending aorta are seen numerous, large, atheromatous deposits. The heart was enlarged, the left ventricle being thickened and dilated. Pericardium coated with lymph and enormously distended with bloody serum, of which there were by measurement between three and four pints. Serous effusion in pleural cavities, and extensive œdema of lower extremities. The aorta only has been preserved.

From a gentleman, aged thirty-three years, a patient of Dr. John Homans. Health failing for more than two years, and distinct cardiac symptoms for the last eighteen months. Palpitation and dyspnœa from the first, and for the last four months he could not lie down in bed; enlargement in cardiac region; pulse irregular for the last two weeks, but previously not remarkable; complexion pale, but not livid; had had ascites, which had disappeared.

368. Aneurism at the origin of the aorta, bursting into the pericardium; from a patient of Dr. John Ware. The sac is about the size of an English walnut, and communicates with the artery just above the valves by an opening one third of an inch in diameter; edges rounded, and to some extent within the orifice the inner surface is smooth; at its thinnest part there is a ragged opening into the pericardium, and it seems also about ready to burst into the pulmonary artery, as sometimes happens in these cases. The cavity of the pericardium contained more than a quart of coagulated blood. In the preparation the vessels only are preserved.

The patient, aged thirty, was an officer in one of the Banks in this city. Was first seen by Dr. W. in May, 1832; had been indisposed for some months, but had not thought much of his case till within a few weeks; complained chiefly of pains and stiffness in all the limbs, and of a great and general feeling of weakness, but scarcely of anything else; had lost flesh, and his countenance, which in health was remarkably ruddy, was now pallid and thin; on examination of the heart there was no increased impulse, but a slight bellows or rasping sound was heard on the left side, and seeming to occur between the two sounds. This sound was invariably heard during the two months of Dr. W.'s attendance, but otherwise nothing pointed to the heart as the seat of disease. The only additional symptom during this period was a considerable tenderness across the lower part of the chest, in consequence of which a disagreeable sense of jarring was occasioned by walking, or by any sudden motion. About the end of July he returned to his business. He however grew more feeble, complaining of excessive weakness and faintness, and of great soreness across the chest. November 1st, he died instantly, whilst conversing with a person at the Bank. This case was published more fully in the Boston Medical and Surgical Journal for March 27th, 1833.

369. False aneurism of the ascending aorta; the anterior portion is mostly involved in the disease, the vessel itself having on its inner surface an opaque, rough, inelastic appearance, but no ossific deposit. From a female, aged fifty-seven, a patient of Dr. Charles G. Putnam. In 1829, Dr. P. found her with constant cough, palpitation, and some dyspnoea; at the third rib

on the left side, two or three inches from the sternum, was a diffused enlargement with a strong pulsation; she was much relieved by bleeding and the use of digitalis. In June, 1831, her condition was much worse; left side of chest one inch and a half larger than the right; sound of heart noisy, and impulse strong; resonance on percussion natural, except over region of tumor; respiration on left side feeble, and on the right puerile. In February, the respiration on the left side was inaudible, with dulness on percussion; she was pale and emaciated, but the muscular strength was good; pulse frequent and rather hard. Died suddenly, July 5th, 1832, whilst going to the pump for a pail of water.

On raising the sternum, the aneurismal sac was found to be connected with it and the ribs by a thick, adventitious membrane, extending into the left side of the chest so as completely to occupy the place of the lung; a portion of the sternum and of the third rib absorbed. The heart with its valves, and the aorta beyond the aneurism were healthy, the heart being shown in the preparation as well as the diseased artery.

**370.** Mixed aneurism of the ascending aorta; specimen distended and dried; from a patient of Dr. Woodbridge Strong. The whole ascending aorta was dilated. Upon its right side, and towards the front, there was found a true aneurism, about half as large again as the fist, and upon this was engrafted a false aneurism about one-third its size; this last adhered to the right lung, the right side of the sternum and the cartilages of three of the ribs forming in part the parietes of the sac. Sac protruded and threatened to burst between the cartilages of the third and fourth ribs, as shown in the preparation by a defined bulging out at this part, there being a flatness on percussion on the right of the sternum, but without any obvious enlargement. Just above the aortal valves there was a dilatation, distinct from the aneurism, and about half as large as the fist. The aorta throughout contained a considerable quantity of atheromatous and cretaceous matter, and some of the same was found in what was regarded as the false aneurism. The heart was rather large, and filled with blood; left ventricle thickened; valves healthy. The aneurism did not appear to press particularly upon the air-passages, nor upon the œsophagus.

The patient was a laboring man, about fifty years of age, and the aneurism first appeared externally about four years before death, when the chief symptoms were dyspnœa and dysphagia. He kept about, but had not done much work for the last year, and died at last of acute pneumonia. 1840.

371. Very great and regular dilatation of the entire circumference of the ascending aorta and arch, the internal surface being everywhere much diseased. Descending aorta healthy; perhaps small, and becomes rather abruptly so. The heart itself is very small, and the left auricle and ventricle are laid open. The aorta, at its origin, is of about the usual size.

*Dr. Winslow Lewis.*

372. Aneurism of the arch of the aorta, bursting into the left primary bronchus. Just beyond the left subclavian artery is a well marked dilatation of a portion of the circumference of the vessel, to the extent of about two inches and a third, and upon this are engrafted two small, false aneurisms, one of which is closely connected with the membranous portion of the trachea at its lowest part, and the other with the left primary bronchus. At this part the bronchus was completely filled by a firm mass, one inch and a half in length, consisting partly of fibrine, partly of coagulated blood, and evidently formed long before death; the point at which this obstruction finally gave way was readily discovered at the time of the dissection. There were also two false aneurisms arising from the abdominal aorta, of a rounded form, and about one inch and a half in diameter; one was situated at the cœliac, and the other at the superior mesenteric artery, and both of these vessels were obliterated. Thoracic aorta generally somewhat diseased in structure. The bronchi contained much coagulated blood, mostly on the right side. Right lung healthy, but the left greatly diseased, being filled with small suppurating cavities, of the nature of which there was some question. In the preparation, the whole aorta, the trachea, and the primary bronchi are shown.

The patient, aged thirty, entered the Mass. Gen. Hospital, July 25th, 1835. He had had severe pain in abdomen or epigastrium for about five months, and for the last month cough with expectoration. Had done no work for the last nineteen

days. After his admission the cough and dyspnoea were very severe, coming on in paroxysms, and sometimes having a laryngeal character; there was much pain and tenderness on pressure about the epigastrium, and much constitutional affection. Disease in the left side of chest ascertained by physical examination, but aneurism never suspected. On the 26th of November, he was seized in the evening with a violent fit of coughing, during which there came on active hæmoptisis; more than a pint of blood poured out without effort, and he died in less than fifteen minutes. A full history of the case is in the Hospital Records.

**373.** A second specimen of aneurism, bursting into the left primary bronchus; from a patient of Dr. Joseph Roby. The aorta is dilated from its origin to some distance beyond the arch, and most so at the arch, from which there arise two false aneurisms, nearly half as large as the fist; one of these, as is seen in the preparation, adheres to the upper part of the sternum. The concave part of the arch pressed upon the left primary bronchus, into which, almost at the bifurcation, the rupture took place. Upon the inner surface of the œsophagus is seen a small but deep ulcer, communicating with the bronchus very near to the opening from the aneurism, and intended, perhaps, to open into the aneurism itself; so, in a figure by Cruveilhier, (*Anat. Path. liv. iii. pl. 4.*) ulcerations are seen in the bronchus, whilst the aneurism bursts into the œsophagus, the reverse of the present case. The trachea and bronchi on the right side were filled with coagulated blood; the right lung voluminous and healthy, the left smaller, and having a flabby, leathery feel.

The patient, a negress, aged sixty-four, was first seen by Dr. R. in October, 1834, for supposed rheumatism of the left shoulder and side of the neck. In October, 1835, when next seen, she stated that during the previous winter she began to have dysphagia, headache, and long continued pain in neck extending upwards behind the left ear. For a week past had had orthopnoea, pain and oppression at bottom of sternum, and loud, tearing, frequent cough, without expectoration. Never had palpitation. Dysphagia at times great; could not swallow a piece of meat without drinking, and was often extremely distressed after attempting it. On examination of chest, there

was found on the left of the sternum, over the junction of the upper and middle portions, a decided protrusion, a strong impulse, and a complete and well defined flatness on percussion. Respiration heard generally over left side with sibilant râle, and puerile with noisy râles over right. No bellows-sound. The case was diagnosed as one of aneurism at the arch of the aorta, with compression of the left lung or bronchi, and bronchitis. From the above date, October, 1835, the principal symptoms and physical signs continued, and the dysphagia was particularly urgent, seeming at times to threaten suffocation. February 22d, 1836, whilst conversing, she made an effort to rise, and called for the spit-cup, when a gush of blood issued from the mouth and nose, and she died in an instant; not more than half a pint of blood was discharged externally.

374. An immense aneurism of the upper part of the abdominal aorta, extending towards the left side, and destroying all the parts before it, till the ribs, muscles, and skin came to form a part of the sac, as shown in the preparation; two of the ribs, and the bodies of three or four of the vertebræ are extensively eroded, the intervertebral substance remaining comparatively untouched. The communication with the aorta is not very free, and, in fact, the situation of the aneurism is such that it may have been the left renal artery in which the disease began; the right side of the aorta, opposite the great sac, is beginning to be aneurismal. The size of the tumor could not be correctly determined, but it extended into the abdominal cavity, presenting there a larger surface than posteriorly and externally.

The patient was a sailor, aged forty-one, and had been under the care of Dr. Edwin Adams. In March, 1830, he arrived from Cadiz, after a long and rough passage. Was soon afterwards attacked with pains, chiefly affecting the loins, which returned often and with severity till the following November. On the 14th of December he called Dr. A's attention to a swelling on his back, which he said had appeared since the day before; on examination, there was found to be a tumor upon the left side, near the spine, and opposite the lowest ribs, about the size of a hen's egg, pulsating, and evidently aneurismal. This went on increasing rapidly, so as to measure, in the month of May, from fifteen to sixteen inches in

diameter. June 1st, it began to slough, and on the 10th, when it was about ready to burst, the patient died.

375. Aneurism of the right subclavian artery; from a patient of Dr. J. Greele Stevenson. Sac about as large as an orange, and seems to be formed by a dilatation of one half of the calibre of the vessel; parietes diseased. From a middle-aged female.

376. Aneurism of the right common carotid, about midway. It is about the size of an English walnut; has not been opened, but appears to be filled with coagula; surface irregular, and the whole calibre of the vessel is more or less affected. A similar disease is commencing at the bifurcation. In the preparation, the par vagum is seen to be attached to, and spread out over the sac.

*Dr. Winslow Lewis.*

#### IV. VEINS.

377. Phlebitis. The specimen shows the common and external iliac veins of each side and the left femoral plugged up with fibrine and coagulated blood; the same extends more than an inch into the vena cava, where is seen a large cavity in the fibrinous clot, which, in the recent state, was filled with what is often described as pus. (Cruveilhier's Anat. Path. liv. xxvii. pl. 4.) The veins throughout the left lower extremity were mostly filled with fibrine, though several of them with coagulated blood only. Below the groin, where the disease seemed to have commenced, the fibrine was adherent; elsewhere it separated readily from the coats of the vessel, leaving the inner surface in some places evidently inflamed, though generally quite healthy in appearance. Veins of the right lower extremity not extensively affected. The specimen having been put directly into alcohol, the color is somewhat preserved; femoral separated from the iliac vein for the convenience of the preparation.

From a man, aged forty-eight, who entered the Mass. Gen. Hospital, October 10th, 1838, in the last stage of phthisis, and died November 21st. For the last three weeks, there was frequently recorded œdema with soreness of the lower extremities, and in each groin a hard, knotted cord, extending

downwards about six inches; swelling of left extremity very great, and extended as high as the ilium.

378. Inflammation of the lower vena cava. Where this vessel passed behind the liver, it was about half as large as the wrist, and felt quite firm, being completely filled by lymph; below this it was rather softer, though proportionably large, and the fibrine was of a dirty, yellowish color, with more appearance of blood; the iliac and renal veins were distended by a thick, dark brown, grumous, bloody fluid, with some soft fibrine. The parietes of the vein were not thickened, but the inner surface was generally rough, and towards the heart could not be separated from its contents; in the preparation, most of the vessel has been preserved, and cut open so as to show the fibrine in situ. The heart was well, but on looking into the lower cava, just below its termination in the auricle, the smooth, rounded surface of the fibrinous plug was distinctly seen. The lungs were pretty extensively tuberculous, and there was a very peculiar disease of the glands of the mesentery and upper part of the abdomen, forming a mass larger than the fist, and consisting, for the most part, of a grumous substance such as was found in the veins. Immediately over the aorta, however, and connected with the above mass, there was a great quantity of yellowish concrete substance, apparently consisting of chyle, which had been arrested in the lacteals and had undergone this change, this being evidently the case in some of the vessels which were more distinctly seen in the mesentery.

The patient was a State Prison convict, twenty-eight years of age, and had been sick for three or four months; at first he appeared to have simple fever, but gradually sank without any marked local symptoms. No swelling of the lower extremities, nor of the veins was ever observed. 1844.

379. The left iliac vein, showing the result of puerperal phlebitis which occurred about nine years before death; the patient suffered for a long while from the disease, and died at last from puerperal convulsions. The vena cava and veins upon the right side were healthy. The common and external iliac veins upon the opposite side appeared contracted, but, on being cut open, were found to be pervious throughout, and sufficient for

the transmission of the blood, though smaller than those of the opposite side. The cavity was traversed by numerous short filaments, about the size of a common sewing thread, running directly across the course of the vessel, and perfectly free except at the extremities by which they were attached; near the vena cava these had nearly disappeared. A very conspicuous object within the cavity of the vein was a longitudinal and well marked band, three or four inches in length, forming, as it were, a part of the parietes of the vessel, and yet appearing as if it must be the organized remains of an old fibrinous coagulum; from this band several of the filaments arose. Inner surface of the vein polished, and showing every appearance of recovery from the former disease. Left inguinal vein healthy, and the internal iliac nearly free. 1846.

380. Phlebolites, from various subjects; all from the pelvic veins; vary from the size of a mustard seed to that of a pea; one of them broken open to show the concentric layers of which they are composed. *Dr. J. B. S. Jackson.*

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## V. ORGANS OF SENSE.

### I. NERVOUS SYSTEM.

381. Cranium of a child sawed open, to show the dura mater, falx, and tentorium.
382. Extensive ossification of the dura mater on each side of the longitudinal sinus. *Dr. George B. Doane.*
383. A second specimen. "From a young woman who died suddenly after complaining of intense pain in the head. An abscess was found in the middle lobe of the right hemisphere containing pus and blood." *Dr. F. A. Sumner.*
384. A third specimen; a large and thick mass of solid bone in the anterior part of the falx. From a man, about thirty-two years of age, who died at the Mass. Gen. Hospital of phthisis; no cerebral symptoms, so far as known. April, 1834.

385. A fourth specimen; a broad lamina of bone from the anterior part of the falx. From a man who was an habitual drunkard, and had had delirium tremens several times.

*Dr. J. B. S. Jackson.*

386. Tumor of the dura mater, from a patient of Dr. William Gordon. The following notes were taken at the time of the dissection:—The mass is of a flattened oval form, three inches in length, two inches and three fourths in width, and an inch and a half in thickness, with numerous, dilated, thin vessels creeping over its surface, which is irregular or bosselated. It is quite dense to the feel, of a mixed white and red color, and, on being cut through, is found to consist almost uniformly of a structure not unlike condensed cellular tissue, without any distinct fibrous or carcinomatous appearance. It arose from the dura mater, lining the frontal bone upon the right side, and pressed down upon the substance of the brain so as to cause a deep and permanent excavation; there were slight adhesions at this part to the surface of the brain, and an obliteration of the convolutions, with thinning and softening of the grey substance, the softening extending at one part to the depth of two-thirds of an inch. Cruveilhier and Andral both speak of the brain as being rather atrophied than compressed in these cases, and so account for the comparative latency of the disease, but, in the present case, the right hemisphere was so far compressed as to encroach very considerably upon the left. The brain and membranes were otherwise healthy; the optic nerves, however, were much elongated anterior to the commissure, though not diminished in size. The cranium, also, was healthy, except at the part corresponding to the tumor, where there was on the inner surface a growth of new bone, about an inch in extent, having a crystallized or coral-like appearance, and to which the dura mater closely adhered, (No. 387.)

The patient was rather a large, fleshy woman, thirty-two years of age; general health good. Was confined a year and a half before death; six months afterwards, her sight became affected, and she was supposed to have amaurosis, dependent upon nursing. Dimness of vision continued from that time, the left eye being more affected than the right. Six weeks before death she was again confined, after which the affection

increased, so that she was at times totally blind; never had double vision. No affection of the other senses, and no proper paralysis, though on three or four different occasions, previous to her last confinement, she fell in the street, her limbs seeming to give way beneath her. Had also more or less headache throughout her sickness; pain mostly about the temples, and behind the ears, but no more on one side than the other, and never urgent until her last confinement, when it had a decidedly neuralgic character. Patient had naturally a lively disposition, but during the last year became very fractious, and occasionally made a strange remark; was also quite drowsy for some months before death, so that she would often fall asleep during the day, but otherwise, the mind was not affected. After her last confinement the symptoms became altogether much worse, though she was able to nurse her child, attended somewhat to her domestic affairs, and was never confined to her bed; during this period she never walked out, but a week before her death she rode out in a sleigh, and enjoyed it much. Retained her appetite to the last, and the stomach and bowels were generally well. On the night before her death she was restless, and towards morning had some convulsive affection, which her husband regarded as hysterical; through the forenoon she continued in a nervous state till eleven o'clock, when she fell asleep and slept for two hours; she then awoke, convulsions came on, followed by coma, and she died at three o'clock, December, 1842.

387. A portion of the frontal bone, connected with the above case.

388. A portion of brain, showing the fibrous structure. From a child who died of hydrocephalus, the amount of serum in the ventricles being very great, and the brain being in one place but about three lines in thickness, as shown in the preparation.

*Dr. Erasmus D. Miller, of Dorchester.*

389. Tubercular masses from about the cerebellum. The patient was a lad, ten years of age, and had been under the care of Dr. John Ware; severe headache and vomiting for four or five months were the chief symptoms, but there had been no failure of the intellect, sensation, or power of motion. In the

cerebellum were five masses, from one-half to three-fourths of an inch in diameter; a smaller one in the left crus, and upon the under surface of the tentorium near the left temporal bone, was one about an inch in length; softening had commenced. The case was published in the *Am. Jour. of Med. Sciences* for November, 1828.

390. Left lobe of the cerebellum, containing near the surface two or three tubercular masses, about half an inch in diameter, of a rounded form, perfectly defined, quite firm, except for some central softening in one of them, and, when recent, of a greenish yellow color. The patient, aged twenty-three, had been under the care of Dr. Henry G. Clark, and died in July, 1844, having had phthisical symptoms for about three years. For the last two months he had a severe and constant pain just about over the left lobe of the cerebellum, with dizziness, so that he sometimes staggered in the street. Symptoms of acute disease came on nine days before death, and, on dissection, there were found the usual appearances of tubercular meningitis. The lungs were extensively diseased.

391. Cartilaginous deposits in the arachnoid membrane, in the form of thin, defined plates, two lines or more in diameter, several of them having a small point of ossification in the centre. This appearance was found, more or less, throughout the whole length of the spine. The two other membranes, and the spinal marrow itself, are seen to be healthy. From a lady, who died from cancer of the breast, having suffered much from pain in the head and along the spine. 1844.

392. Spinal marrow, from a case of very extensive backward curvature of the spine, (No. 117.) It is everywhere of full size, except at the part which corresponds to the curvature, and there, the investing membrane being somewhat injured in the removal, a portion of its substance may have escaped and caused the slight appearance of contraction which is now seen.

## II. EYE.

393. Ossification of the eye. The patient entered the Mass.

Eye and Ear Infirmary July 6th, 1839, and the following notes of the case were taken by Dr. R. W. Hooper:—  
“Thomas Cummings, aged twenty-three, has had some inconvenience in left eye from infancy, caused by a burn; vision indistinct, with occasional, slight inflammation for many years; loss of vision for the last two years, since which time he has been subject to violent pain, alternating from one to the other eye, but seeming to proceed from the left, generally one eye at a time being affected with pain, redness, and flow of scalding tears. Vision of the right eye also occasionally much affected for the last two years; during this time has done no regular work, and is now much reduced by his disease. On examination, the left eye is much smaller than the right; conjunctiva not injected; cornea transparent; iris dark, and bulges forward into the anterior chamber; pupil irregular, and beyond it is an opaque body, of a dirty chalky color, and adhering to the iris at the upper part; cannot discern light; no pain. Right eye prominent, with considerable injection of conjunctiva; cornea transparent, and there is no apparent disease within the eye, but he has great pain, irritability to light, and flow of scalding tears.

July 18th, the patient having got no relief, the crystalline lens of the left eye, which was evidently ossified, was removed by Dr. Jeffries, as being the source of the trouble, (No. 394); in the course of the operation there was found to be in the place of the vitreous humor a thin, dark, serous fluid. Lens completely ossified, except in the centre, where there was found a cavity, containing a milky fluid, which was disclosed by a portion of the lens having been broken off during the operation.

On the 30th of August, the patient having continued to suffer very severely, and becoming completely exhausted, the left eye was removed by Dr. Jeffries, supposing that some irritating body still remained within it. On cutting it open, there was found at the bottom of the eye, and closely connected with the choroid coat, an ossific plate, very irregular in its outline, but, by estimate, about three lines in diameter; one sharp point seemed to be nearly or quite in contact with the optic nerve at its entrance into the orbit. After the operation there was not much amendment for some months, but in the

course of the following year the patient regained his health and the use of his right eye.”

*Dr. John Jeffries.*

394. Ossification of the crystalline lens. (See last specimen.)

*Dr. John Jeffries.*

395. Cancerous eye, extirpated by Dr. John Jeffries. The patient, a blacksmith, aged thirty-eight, entered the Mass. Eye and Ear Infirmary August 8th, 1838, and reported as follows:— The disease began six years ago with a reddish, fleshy, but not painful tumor near the inner angle of the left eye, and eighteen months ago it was removed, being then about half as large as a pea. After the operation the disease began to increase, and during the last winter there was much pain in the eye, which was relieved at times by the formation and spontaneous bursting of small pustules. Since April there has been an irregular open surface, with increased pain. The ulceration now presents a ragged surface, of a whitish color, and attended with a thin, serous discharge; about the lower edge are a few, white, curdy bodies, from the size of a small shot to that of a pea, not sensitive, and easily broken down. Conjunctiva everywhere injected. Eye turned upwards and outwards. Vision distinct when the lid is raised by the finger, the organ itself being apparently healthy. On the ninth of August the eye was removed, and, at the end of a week, the patient was discharged, at his own request.

On examination of the organ after removal, the disease was found to involve the greater part of the anterior, free portion of the globe below the cornea. It seemed to have originated in the sclerotic coat, or in the cellular membrane connecting this with the conjunctiva, this last being in some places raised up in a healthy state by the disease beneath it. Ulcerated surface whitish and dense, the curdy bodies above mentioned appearing to consist of a thickening and disease of the sclerotic itself. Lower lid dissected from the globe of the eye to some extent by the ulceration. Organ otherwise healthy.

396. Melanosis of the eye. A well marked melanotic tumor, equal to more than an inch in diameter, is closely connected with the sclerotic coat, being mostly external, though a large portion is

seen to be within the cavity; the structure is well shown, as the mass was cut through when the operation was performed; one or two quite small and distinct masses are also seen, and appear to be just commencing in the sclerotic coat. The eye itself is not enlarged.

The patient, Mrs. P., aged forty-eight, entered the Eye Infirmary, in this city, November 12th, 1844. Eight years before, she began to have pain in the right eye, followed by loss of vision, the pain continuing, and being so severe as to require the free use of opiates. Three years before, the lens became opaque, and for the last six months there had been a protrusion of the eye from the cavity of the orbit. On examination, a tumor was felt just within the orbit on the temporal side; the eye was greatly protruded, the lids discolored, and the iris was pushed forward by the opaque lens. On the 12th, the eye was removed by Dr. R. W. Hooper, and with it the whole of the diseased mass; the patient soon became comfortable, and on the 23d, returned into the country.

On the 15th of December, 1845, she again showed herself, with a return of the disease; about a fortnight after she left the Infirmary, as she stated, there appeared a small purplish spot about where the external incision terminated when the eye was removed, and just in the cicatrix. In August, the disease re-appeared in the orbit, and on the above date the cavity was filled with masses varying in size from a pin's head to a chestnut, the surrounding integuments being also affected; at first there was severe pain with swelling in the cheek, but these symptoms had subsided, and her general health was decidedly better than before the removal of the eye. In April, 1847, she was heard from, and the tumor was then as large as a pint bowl.

### III. EAR.

397. Various sections of the temporal bone, showing the auditory passages.
398. Ossicula of the internal ear; foetal.
399. Ossicula of the internal ear; adult.

400. Polypus from the ear of a female, about thirty years of age; removed by Dr. John Jeffries, at the Mass. Eye and Ear Infirmary. It arose from the membrane of the tympanum, was attached by a very small pedicle, and gradually enlarged towards the opposite extremity, so as to fill the external meatus. December, 1838.
401. Caries of the temporal bone. The patient, a female, aged eighteen, had had some discharge from the ear with pain for two or three years. For the last six weeks the pain was very severe, affecting the whole side of the head, with deafness, and a copious, purulent, and very fœtid discharge; the general health failed, and she gave up work, there never having been any active cerebral symptoms, though for the last week there was a slight pulmonary affection. On dissection, the cavity of the tympanum and mastoid cells were found to be carious, and these last were filled with fœtid pus. The dura mater over the petrous portion was ash-colored, thickened, and rough, the bone itself was much discolored, and between the two was a collection of fœtid pus. Brain itself sufficiently healthy, but the lungs were extensively gangrenous.

*Dr. Charles G. Putnam.*

402. Caries of the temporal bone, from a man who died of phthisis at the Mass. Gen. Hospital, April 13th, 1838, and who stated that he had always been subject to a discharge from the ear. The specimen was examined by Dr. R. W. Hooper, who found the cavity of the tympanum filled with a very offensive, greenish, thick pus, and the membrane destroyed; no traces of the ossicula.
403. Caries of the left temporal bone, from a young man who was deaf and dumb, and who died of phthisis at the Mass. Gen. Hospital, December 27th, 1837. The examination was made by Dr. R. W. Hooper, and the following appearances noted:—  
“An irregular cavity exists in the substance of the bone, communicating with that of the tympanum, two lines in diameter, and apparently the result of caries; both of these cavities are filled with a thick, yellow substance like melted cheese, and on removing this, the malleus and incus are detached, the

ossicula themselves being healthy ; the membrane of the tympanum is entirely wanting. The vestibule, semicircular canals, and cochlea are filled with a white, opaque, cheesy substance, but otherwise appear healthy. Mastoid cells healthy. The bone has been sawed through in various directions, but the parts can be put together, and the caries seen. As to the nature of the disease in this case, it was probably, as in the last specimen, a part of the tuberculous affection of which the patient died, and not connected with his deafness.

On cutting through the inner table of the petrous portion of the right temporal bone, a transparent, yellowish, rather viscid fluid is discharged in considerable quantity, seeming to have filled the cells. The different parts of the internal ear appear healthy."

#### IV. NOSE.

404. A fleshy nasal polypus, weighing three ounces and a half; the large bulging extremity protruded into the throat. The patient, a middle-aged man, had symptoms of cold in the head in March, 1829; in May, there was a considerable discharge from the nose, offensive, and sometimes bloody. In June, the discharge subsided, the left nostril became wholly obstructed, and a tumor appeared, which increased so as after a while to obstruct also the other nostril. About the first of September the tumor had increased so as produce severe pain in the temple, the eye, and the upper teeth on the left side. September 19th, he entered the Mass. Gen. Hospital, and remained there till November 26th, during which time he had six operations, which relieved the pain, but did not remove the obstruction. In the spring of 1830 the tumor increased, and frequently bled, and in the summer a portion was twice removed. In September, it protruded considerably from the nostril, and had extended backwards so as to be seen in the throat; health much impaired; he then applied to Dr. Walker, who removed the tumor by a ligature, having first cut away a portion of the septum between the nostrils; the tumor weighed four ounces. In the winter of 1830 his health was much improved, but the tumor had reappeared in the throat, and another small one in the left cheek; in May, 1831, it was removed by ligature from

the throat. In May, 1832, it again protruded in the throat, and was again removed by ligature. In May, 1834, the tumor filled the throat, pressed forward the soft palate, and filled both nostrils, so as to spread the bones of the nose, and cause a protrusion of the eyes; this was removed by ligature, and weighed three ounces and a half; the tumor in the cheek had also considerably increased, and in the following July was removed by the knife and ligature, and a seton passed through the antrum into the nostril. After this last operation the patient suffered no more from his polypus, but died a few years afterwards from some other disease.

*Dr. William J. Walker, of Charlestown.*

405. Gelatiniform, nasal polypi. One of them is of a pyriform shape, and an inch and a half in length. The other, which was situated deep in the nostril, is of an oblong form, about an inch and a third in length, and has a long pedicle, by which it was attached. In their substance are several small vesicles. From a female, about twenty-two years of age; the disease was of nearly two years duration; the operation was performed in April, 1836, with complete relief for a time, but the disease afterwards reappeared, as usual. *Dr. J. B. S. Jackson.*

v. SKIN.

406. Skin of the fore-arm and hand of a fœtus, minutely injected. *Dr. John Jeffries.*
407. Portion of human skin, tanned. From Rog, a pirate, who, with some others, was executed in this city several years since. *Dr. S. D. Townsend.*
408. Portion of human skin, tanned. From Walton, the highwayman, who died at the State Prison in 1837. *Dr. Winslow Lewis.*
409. Specimens of skin pricked with India-ink. *Dr. Charles H. Stedman.*
410. The same. *Dr. J. B. S. Jackson.*

411. The skin and nail of the little finger, preserved in spirit; from a lad, thirteen years of age, who, jumping up to reach something from a hook, got the hook caught in a ring which he had upon the finger, and tore the skin and nail entirely off; the accident happened four years ago, and the young man has now a serviceable finger, and upon it a rudimentary nail. The ring accompanies the specimen. 1845.

*Dr. William E. Coale.*

412. Cutaneous excrescences from tanned South American Ox-hides; they are mostly from two to four inches in length, and more than an inch in diameter, and were all of them, four in number, cut from about the neck. 1842.

*Dr. A. A. Gould.*

413. Wax model of an upper extremity affected with Leprosy. This and the following are French preparations. 1840.

*Dr. George C. Shattuck, Jr.*

414. Wax model of a leg affected with Psoriasis. 1840.

*Dr. George C. Shattuck, Jr.*

415. Cast in plaster of a lower extremity affected with Elephantiasis; taken by an Italian artist in this city, and presented to the Society by Dr. George Hayward. The whole limb was enlarged, and particularly the lower part of the leg, which measured twenty-eight inches in circumference, the limb contracting to its natural dimensions just above the ankle, and very suddenly; foot not affected. The integuments of the thigh and leg were coarse, hard, and unyielding, becoming more so below the knee, the most diseased part being cracked, rough, and tuberculated on the surface; on this last were also extensive and hard crusts, from an abundant serous exudation, to which the patient had been subject for about two years. The whole limb was colder by several degrees than natural, and of a darker hue.

The patient, aged twenty-one, was a Virginian by birth, but had lived in this state since he was two years of age. In February, 1842, he entered the Mass. Gen. Hospital to have the limb removed, but nothing was done, and he soon left the house. The disease was of sixteen years duration, and began

with swelling and a shooting pain in the limb, coming on after a slight injury, which was attended with general febrile symptoms, and confined him to the house for two months. The swelling increased very slowly, and he had occasional attacks resembling fever and ague, accompanied by severe shooting pain in the left groin and limb. Eight years before admission he went to sea, and for the next six years he was able to perform all the duties of a seaman without inconvenience; the swelling and pain in the limb then increased more rapidly, and the skin, which had been smooth, became rough, tuberculated, and cracked, with serous discharge, as above stated; this, of course, obliged him to give up his work, though his general health was sufficiently good.

The patient is now (1845) at Lowell, and the size of the limb has greatly increased.

416. A very beautiful pencil-drawing of a foot and leg affected with Elephantiasis. The specimen, which has not been preserved, was sent to the Society from St. Croix, by Dr. William E. Townsend, whilst on a visit to that Island for his health. The patient was a middle-aged man, very intemperate in his habits, and had had the disease for many years; the limb was amputated below the knee. 1841. *Dr. J. Francis Tuckerman.*
417. Two specimens of cuticle from a foetus at the term, showing its different thickness in different parts of the body; the thickest specimen is from the heel, and the other from about the knee. *Dr. J. B. S. Jackson.*
418. "A Cornu, being a preternatural growth from the nail of the Right great toe of a woman, ninety-two years of age, which turned under the ball of the foot; taken from a patient by Dr. Jeffries. Anno 1798." From his son. *Dr. John Jeffries.*
419. Hypertrophy of the great toe nails, from a middle-aged female; one measured twenty-three, and the other thirty-two lines in length; they are hard, thickened, strongly incurvated, and are preserved in connection with the last phalanx. 1841. *Dr. O. W. Holmes.*

420. Case of nævus upon the scalp. The subject was an infant, aged ten months; the complexion was very fair, and the head covered with long, soft, and perfectly white hair, except over one parietal bone, where was a single lock of hair, which, by contrast, appeared to be nearly black. At the time of birth there was in the place of this last a patch of coarse, dark colored skin, but no hair. Two locks are shown beneath a plate of glass, and the contrast of color is very striking. 1847.

*Dr. J. B. S. Jackson.*

421. Hair from the head of an Albino negro boy; it is perfectly crisped, but snow-white, as were the eye-lashes and eye-brows, the colored part of the eyes being pink, and the complexion delicately fair. His voice, however, was coarse, and his features those of a full blooded negro. He was exhibited in this city in July, 1841; according to his keeper, he was eight years of age, and came from the State of Georgia; his parents are native Africans, perfectly black, and have four or five other children, who are not remarkable as to color.

*Dr. J. B. S. Jackson.*

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## VI. VOCAL AND RESPIRATORY ORGANS.

### I. AIR PASSAGES.

422. Complete ossification of the thyroid and cricoid cartilages. 1832.

*Dr. J. B. S. Jackson.*

423. Ossification of the arytenoid cartilage; several specimens. M. Andral, (Anat. Path.) MM. Trousseau and Belloc, (Phthisis Lar.) Dr. Gross, (Path. Anat.) and Dr. Ryland (Dis. of the Larynx) give the impression, or state, that this has never been observed, and yet, I think that I have met with it as often in this as in any of the other cartilages. 1832.

*Dr. J. B. S. Jackson.*

424. Ossification of the trachea, from a man eighty-four years of age.  
*Dr. J. B. S. Jackson.*
425. Ossification of the trachea and larynx; prepared in connection. 1843.  
*Dr. J. B. S. Jackson.*
426. Ossification of the trachea of a Peacock; in birds this may perhaps be considered as the normal condition. 1843.  
*Dr. J. B. S. Jackson.*
427. Caries of the upper back part of an ossified cricoid cartilage. From a middle aged man, who died of phthisis. The specimen of necrosis of the sternum (No. 147) was from the same subject. June, 1844.
428. The larynx of a man who had cut his throat three different times, a patient of Dr. Benjamin E. Cotting, of Roxbury. The cicatrization upon the inner surface, the result of one of his former attempts, is very distinctly seen, and a piece of whale-bone has been passed through, to show a fistulous opening which remains. The thyroid and cricoid cartilages are extensively ossified, and upon the left side are firmly ankylosed, but this is perhaps a mere coincidence in the case. The cricoid had been cut through on the median line anteriorly, at some former time, and the two extremities, instead of being in apposition, are situated the one directly above the other, and about one-third of an inch apart. In the preparation, the larynx has been cut open posteriorly, and the thyroid cartilage removed upon the right side, so that all the above points are distinctly shown.

The patient was seventy-four years of age, and a pauper in the Roxbury Alms-house; habits very intemperate. In June, 1841, he cut his throat for the first time, and recovered with a fistula, one-third of an inch in diameter, and about in the situation of the cricoid cartilage. The second attempt was made on the 26th of December, 1843, and he was then first seen by Dr. C.; he had severed about four-fifths of the wind-pipe, through the old fistula, and had divided a large vein upon the right side; lacerated by three or four strokes of a razor, and bled profusely. Sutures were taken in the skin, and one

through the wind-pipe itself, an opening being left in front to prevent suffocation, and the wound healed by granulation in about four weeks, leaving a fistula about five-eighths of an inch in diameter. On the 16th of April, 1844, an operation was performed to close this opening, and on the eighth of May a second, after which the closure was such that, as seen in the preparation, a small probe only would pass through; his speech, &c. were restored, and no air could be forced through. On the 28th of May, 1844, he cut his throat for the third time, and died in about ten minutes, lacerating the soft parts extensively, but not dividing the larynx nor the trachea.

429. Ossified cyst from the thyroid gland, about the size of a pea. 1844.

*Dr. J. B. S. Jackson.*

430. Larynx and trachea from a case of croup, preceded, as so often happens, by an effusion of lymph in the fauces. From a child, three years of age, a patient of Dr. John H. Dix. April 20th, he went to school, and, as it was thought, took cold; on the 22d, Dr. D. saw him, and found redness of the fauces and right tonsil; on the 24th, the left tonsil was inflamed, and lymph had begun to appear. Symptoms of croup supervened on the 26th, probably late in the day, and the child died about eleven o'clock, P. M. On the 27th, breathing very difficult and hoarse; spoke in a loud whisper; cough hoarse; much dysphagia.

On dissection, lymph was found on both of the tonsils, and upon the root of the tongue, besides some upon the soft palate; tonsils considerably enlarged. Larynx and under surface of epiglottis coated with adherent lymph, the ventricles being filled with it; extended about half way down the trachea, becoming gradually very much softer and less adherent, and being finally lost in the viscid secretion which nearly filled the canal; on the right side, however, it was continued down to about the commencement of the secondary bronchi. The bronchi contained a great quantity of yellowish, creamy pus, but without any appearance of lymph or mucus. Mucous membrane somewhat red, the lungs being only moderately congested. Peyer's patches somewhat red, as they not very unfrequently are in this and in some other cases of acute disease in children.

431. Several pieces of membrane expectorated in a case of croup, two of them being about two inches in length. The patient was a little boy, seven years of age, and had had symptoms of the disease for eight days. On dissection, the usual appearances were found, the membrane extending far down into the bronchi; in the trachea, it was evident that the original membrane had been thrown off, and a new one formed in its place. A few days afterwards a second fatal case occurred in the same family. 1844. *Dr. John Homans.*

432. "Bronchial polypus;" a portion of lymph expectorated, during a severe attack of pneumonia, by a gentleman, aged sixty-one. It is about two inches in length, firmer than the membrane in croup, and appears, from its ramifications, to have been formed in the smaller bronchi. 1835. *Dr. James Jackson.*

433. Very extensive chronic ulceration of the throat, from a patient of Dr. Charles T. Hildreth. The soft palate and epiglottis are entirely destroyed, with extensive and deep ulceration of the tonsils, and across the root of the tongue; the right horn of the os hyoides is completely exposed to the extent of about half an inch, and also the upper part of the thyroid cartilage; glottis extensively ulcerated; vocal cords about half destroyed on the right side, but less so on the left. The general character of the ulceration is not remarkable, and there is no extension of disease down the œsophagus. From a little girl, aged fourteen. Symptoms of disease in throat since she was five years old; for the last one or two years there had been aphonia, with excessive dysphagia, her food often getting into the larynx, causing a suffocating cough, and being thrown back into the nostrils; she was also deaf. Several years before death the nose was destroyed by the disease, and a syphilitic taint was of course suspected, but, except for the facts just mentioned, there were no indications of this disease; it was rather thought to be a "scrofulous affection," but neither in the lungs nor in the glands were there any traces of tubercular deposit. The father was intemperate, but healthy, as was the mother, except for disease of the heart, of which they both died. 1834.

434. Extensive and deep ulceration on each side of the larynx, in the situation of the arytenoid cartilages. On the left side the cartilage is about one-half denuded, and on the right no trace of it is to be found. Right vocal cord partially destroyed. From a man, aged thirty-three, a patient of Dr. Woodbridge Strong, who died of very extensive tubercular disease of the lungs of two years duration. Voice affected for six months, and aphonia for the last two; much troubled by regurgitation of liquids for three months. On the day before his death he expectorated a substance, which, though not strictly examined, was probably the right arytenoid cartilage. 1832.
435. Portions of bone expectorated, probably exfoliations from the os hyoides; the largest, which seems to have been a part of the body of the bone, is ten lines in length, following the curve, two in width, and about one in thickness; the other fragments are quite small. From a man, about thirty-six years of age. The symptoms were hoarseness, a husky, laryngeal cough, pain, swelling, and tenderness about top of larynx, and in the right side of larynx a rough, flapping sound heard on coughing and speaking; pieces of bone were thrown off three different times within six weeks, and once the fragments were larger than those which have been preserved. The above symptoms lasted about five or six months; the cough, however, remained for some time after the man returned to his work, and considered himself as well. 1837. *Dr. John Ware.*
436. The stopper of a Wedgewood ink-stand, which remained in the air passages for eight months, and was at last thrown off by coughing; length eight lines, and greatest width five.  
The patient was a healthy little girl, aged eleven years. The accident happened about the first of September, 1835; there was a momentary sense of suffocation, but no other suffering at the time, and it was supposed the foreign body entered the stomach. For some days there was a slight disposition to cough, with other symptoms, which seemed to indicate a disordered stomach, and which were relieved by an emetico-cathartic, and about the first of October, there was a return of these symptoms for three or four days. Towards the last of October she had what appeared to be typhoid fever, with con-

siderable thoracic affection; the fever left her in two or three weeks, but the cough increased, and was attended by a copious muco-purulent expectoration, the physical signs indicating no other affection than that of the mucous membrane; was not confined to the room by the cough, nor entirely to the house.

On the 22d of February, she was suddenly seized with suffocation after a violent fit of coughing. At the beginning of each paroxysm the cough was accompanied by a sound in the trachea, as of the closing of a valve, which was loud enough to be distinctly heard across the room; then followed a suspension of breathing for a time, and then a copious expectoration of purulent mucus with partial relief, until another fit of coughing renewed the distress. The presence of a foreign body in the air-passages had been suspected from the first, but was now certain, and an operation was decided upon, but before the arrangements could be made the patient was so much enfeebled as to render the attempt apparently hopeless. For three or four days she was in a state of great exhaustion; pulse 140 to 160; unable to breathe except in the erect posture, and subject to frequent paroxysms of cough and distress, with copious expectoration, as before; these last, however, became less frequent, and her strength improved.

On the 2d of March, the operation of tracheotomy was performed by Dr. J. C. Warren, and the passage was kept open for about a fortnight, but without any effect, as, whenever the opening was free, the cough ceased. Meanwhile her health constantly improved, and the paroxysms became less frequent and distressing; she became able to ride and walk out, but was subject to dyspnoea on quick motion.

On the 2d of May, about eight months from the time of the accident, the foreign body was thrown off during a slight fit of coughing, without violence or distress, and from this time the patient soon recovered her health. *Dr. Enoch Hale.*

437. The seed of a Water-melon, which was swallowed, causing symptoms of chronic laryngitis, and at the end of four months was expelled, with recovery. The patient, a little boy, five years of age, came in from the garden, where he had been playing, with croup, as the mother supposed; she thought that he had taken cold, and that the disease had thus suddenly

supervened. The symptoms were such that for some time it was regarded as that disease, and treated accordingly by the physician in attendance. After a while, finding that there was no material change, Dr. P. was called in, and had charge of the case from that time. The voice was very hoarse and shrill; cough not urgent, but frequent, and strongly laryngeal, the expectoration being very slight; respiration slow, noisy, very laborious, and evidently showed some great obstruction about the larynx, such that, from the time of the accident, the child was never able to lie down in bed, and was often thought by its parents to be dying; there was tenderness on pressure about the larynx, with enlargement of the neighboring glands. Meanwhile, the general health became affected, and the child was fast passing into a state of marasmus, when, at the end of four months from the time of the accident, the presence of a foreign body never having been suspected, the seed was suddenly expelled during a fit of coughing, and the child immediately began to recover. The case occurred in the summer of 1844. With regard to the situation of the foreign body in this case, there may be a question whether it was within or just without the cavity of the larynx, the ventricles, in which alone it could have been arrested, if within, being very small in a child of this age. *Dr. M. S. Perry.*

## II. LUNGS.

438. Pulmonary emphysema, with thin sections of the same; a dried specimen, and preserved in a glass jar.
439. Pulmonary apoplexy. A thin section of the lung having been dried, the limits between the dark coagulum and the simply congested tissue are very distinct. From a man who died at the Mass. Gen. Hospital, June 17th, 1836, from the rupture of a large aneurism of the abdominal aorta into the right lung. *Dr. Jeffries Wyman.*
440. Spurious melanosis of the lung, from about the left apex; when recent, it was nearly coal-black, and uniformly so; felt as if it contained tubercles, though none could be distinguished. According to Dr. E., nearly the whole of the left lung was in

the same state, and about midway posteriorly there was a small abscess, which was filled with pus. On the right side, the middle lobe was similarly affected, a portion of which has been preserved; discoloration very much scattered through the lower lobe, and in the upper was found a cavity as large as the fist. No black matter in any other organs. From a man, about forty years of age, who died at the House of Industry in August, 1838, apparently of phthisis; the expectoration was generally characteristic of this disease, but for two months after his entrance it was unusually dark.

*Dr. William Eustis.*

441. Upper lobe of the left lung in the third stage of pneumonia, and exhibiting a large gangrenous cavity. From a man, forty years of age, who entered the Mass. Gen. Hospital January 12th, 1837, and died on the 29th. Habits quite intemperate; had been subject to fits of some sort for about three months, and had also been insane from about the first of November till the latter part of December. On admission, having just come from the McLean Asylum, there was reported cough with pain in the chest for the last three weeks, and a frothy, greenish expectoration; was pale, quite tremulous, and complained of weakness; skin natural; pulse 88; appetite good. From the above date till his death there was much cough most of the time; expectoration from  $\xi$ ss. to  $\xi$ i., generally yellowish or greenish, with some mixture of purulent mucus, but on the last day dark brown and fætid; breath reported uniformly, after the 15th, as having a fætid, and sometimes a gangrenous odor, and on the 27th, the fætor extended over the ward. On the 14th, the respiration was reported vesicular under both clavicles, with some sonorous râle, the resonance being pretty good; on the 21st, signs of disease began to appear, and before death there was cavernous respiration, with gurgling and flatness on percussion over the front of the left lung; on the last day, however, there was resonance within an inch of the sternum.

On examination after death, a gangrenous cavity was found about the middle of the upper left lobe, capable of holding  $\xi$ iv. or more, traversed by the soft shreddy remains of the pulmonary tissue, of a dark brownish color, and containing a

very thick, dark, bloody fluid, the whole having an excessively fœtid odor; the rest of this lobe was in the state of grey hepatization, except the anterior portion, where was a cavity containing one or two ounces of thick pus, and very near to a state of gangrene. In the lower lobe were numerous deposits of opaque, yellowish lymph, two or three lines in diameter, the intervening pulmonary tissue being somewhat œdematous. The pleura of this side was covered with recent lymph, with adhesions above, and serous effusion below. The pleura and the lymph upon it, to the extent of three or four inches, were quite dark, as if tending to sphacelus; in the pectoral muscles were several spots of a dull brownish and greenish color, and having a gangrenous odor, though not softened, and upon the surface of the body, before the examination, there was noticed a bluish discoloration between the third and fourth ribs on the left side; this was probably, however, a cadaveric change, though the examination was made but seventeen hours after death. Right lung healthy, except for some pneumonia.

442. A tubercular cavity in the apex of the left lung about the size of an English walnut, filled, when recent, with a bluish, pasty substance, and showing every mark of an arrest of the disease. Somewhat similar cavities were found in the right apex, and in both upper lobes were a few perfectly latent tubercles. From a gentleman, fifty-eight years of age; he had the general appearance of one who enjoyed fine health, and was for many years engaged actively in professional business. Twenty-two years before his death he had active hæmoptisis, which occurred several times during the two following years, with cough, dyspnoea, and pain in the chest, so that he was thought by all his friends to have phthisis. From that time he changed entirely his habits, adopting a system of more active exercise, living for a long time on milk and vegetable food, and ever afterwards abstaining from wine. For many years after this he enjoyed very tolerable health, but continued to have a loud, sonorous cough, which was perhaps aggravated by a free use of snuff. Five or six years before death he had another copious hæmoptisis, after having suffered from prolonged cough, pain in the left hypochondrium, and a derangement of the stomach and bowels; for three months he was mostly confined to the house,

and for about a year his health continued very delicate, when it was again restored, and he continued as well as usual till he was attacked with acute pneumonia, which proved fatal in from two to three weeks. 1834. *Dr. James Jackson.*

443. Pneumo-thorax. The specimen shows a tuberculous cavity, which, when recent, was rather more than an inch in diameter, and situated in the upper and posterior part of the lower lobe of the left lung, the perforation being very minute, but now somewhat enlarged; a large bronchus is seen opening into it. This lung was collapsed, and contained only a very few tubercles; the pleural cavity contained nearly five and a half pints of pus and lymph, besides a considerable quantity of air, the membrane being covered with a thick false membrane. Right lung decidedly more tuberculous than the left, though not very extensively so; M. Louis seems to connect the greater frequency of perforation on the left side with the greater tendency of that lung to tuberculous disease, but this does not accord with the observations which have been made here.

From a sailor, aged forty-four, who died at the Mass. Gen. Hospital June 18th, 1838, having had symptoms of phthisis for six months. Perforation took place nineteen days before death; dyspnoea urgent, with copious perspiration; amphoric respiration, metallic tinkling, and resonance on percussion below the left scapula, the resonance of the left chest depending much upon the position of the patient; on succussion, the sound of fluid was heard, at some distance from the chest, and on one day a metallic ringing sound was perceived by the ear, if applied to the sternum when the back was percussed.

444. Pneumo-thorax. The patient, a middle-aged man, had had symptoms of phthisis for about eighteen months, and the perforation occurred forty-one days before death. The symptoms of this last were as follows: lancinating pain in and below the left hypochondrium the first three days, relieved on the fifth, and none for the last three weeks, though there was a constant complaint of severe distress about the middle of the sternum; urgent dyspnoea throughout, the cough becoming dry; respirations from 30 to 36; pulse from 92 to 130, but generally about 100. The physical signs of perforation were, most of them,

strongly marked from the first; amphoric respiration below left scapula, and metallic tinkle on swallowing, coughing, or speaking, but not on inspiration; respiratory murmur absent on left side, puerile on right; pulsation of heart on right of median line.

On dissection, the left side of the chest was found much enlarged, and, on succussion, the motion of fluid was very perceptible; resonant towards sternum, but flat elsewhere, there being a free escape of air on puncturing this side, and the cavity containing, by measurement, a gallon of pus, besides a considerable quantity of lymph. The diaphragm was pushed down so as to be convex towards the abdomen, the spleen was found entirely below the hypochondrium, the stomach within two and a half inches of the pubes, and the heart in the right side of the chest. The perforation was in the upper back part of the lower lobe, two lines or more in diameter, and communicated with a cavity just below the surface of the lung, about one-third of an inch in diameter, and into which a bronchus opened freely; these last points are all shown in the portion of lung which has been preserved. The left lung was collapsed, and contained but few tubercles, though there was a second abscess, about the size of a nutmeg, below the first. The right lung was large, and contained a few tubercles at the apex. 1841.

This patient was attended by the late Dr. Charles T. Hildreth, and the case is interesting as having been the first in which he observed the production of a metallic tinkle during the act of swallowing, an original observation, and one which was confirmed by subsequent experience in his own practice, and in that of others in this city.

445. Hæmorrhage from the bursting of the pulmonary artery into a tuberculous cavity, from a patient of Dr. Henry I. Bowditch. A portion of the right upper lobe is seen, containing a large cavity, which, when recent, was filled with blood, as were the air-passages generally, and in which last the coagula are still seen. A large blood-vessel is also distinctly seen, and a fibrous mass closing its opening into the cavity; this was proved to be a branch of the pulmonary artery, and was undoubtedly the source of the hæmorrhage.

From a man, twenty-three years of age; pulmonary symptoms for two or three years before death, and in the summer of 1839 phthisis became fully developed. October 21st, the patient having been unusually well through the day, walked up two pairs of stairs, sat down upon the bed, and was suddenly seized with a spouting of blood from his mouth to the amount of several pints; under the use of the acetate of lead the hæmorrhage ceased, but, on the evening of the 23d, it recurred with violence, and for a time he seemed to be moribund; he however rallied, but was on the whole failing, when, during the night of the 25th, he raised about a gill of blood, and died instantly.

### III. BRONCHIAL GLANDS.

446. Ossification of the bronchial glands, from various subjects.

*Dr. J. B. S. Jackson.*

447. A cavity at the root of the trachea, opening into the œsophagus. From a little girl, seven years of age, a patient of the late Dr. Charles T. Hildreth. Symptoms of phthisis had existed for about five months; there had also been pain in the region of the cavity, and for the last three or four weeks a free expectoration of fœtid pus. Extensive tuberculous disease was found in the lungs and mesenteric glands, in which last, by a curious coincidence, there was an abscess which opened into the intestine; the specimen is in the Cabinet. Bronchial glands much enlarged, soft, and curdy. The cavity behind the root of the trachea was more than an inch in diameter, well defined, and unlike that of a common tuberculous abscess, the inner surface being rather dark, and the surrounding parts forming the parietes, except in one place, where was attached some soft, pulpy substance which looked a little sloughy; the opening into the œsophagus is one and a half or two lines in diameter, and there are one or two others, which, however, are much smaller. 1838.

The above termination must be quite rare, as compared with an opening into the trachea; a case may therefore be mentioned, which was similar to the above, both as to the opening into the œsophagus, and the gangrenous appearance of the

cavity, and which was reported to the Society by Dr. Samuel Parkman, the specimen being exhibited at the same time; there was, however, an opening into the trachea also in Dr. Parkman's case.

#### IV. PLEURA.

448. "Ossification of the pleura;" a thin, rough plate of cretaceous rather than ossific matter, about two inches in length and one in width. *Dr. Walter Channing.*
449. "Ossification of the pleura." Two thin plates of bone; surface and edges irregular; one is five and a half inches in length, and from one to two inches in width; the other is three inches and a half by one inch and a half. Soft parts removed by maceration. They were situated over the upper lobe of the left lung, and were easily removed by raising the costal pleura. The left upper lobe was healthy, but there was some old tuberculous disease in the right upper one, with chronic disease in abdomen. The patient, aged seventy, formerly a celebrated school-master in this city, entered the Mass. Gen. Hospital January 10th, 1844, with apoplexy, and died on the 18th.

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## VII. ALIMENTARY CANAL.

### I. HEALTHY ANATOMY.

450. A series of fœtal stomachs, the respective ages of the subjects being marked on each. *Dr. J. B. S. Jackson.*
451. A series to show the development of the appendix cœci, and the ileo-cœcal portion of intestine. *Dr. J. B. S. Jackson.*
452. Intestine inflated, dried, and cut open, to show the ileo-cœcal valve. *Dr. J. B. S. Jackson.*
453. A portion of intestine from a fœtus, minutely injected and dried. *Dr. J. B. S. Jackson.*

454. A portion of dried intestine, intended to show the redness of Peyers's patches, which has been observed in persons dying suddenly, whilst the process of digestion is going on; the color, however, is much faded. The patient, aged thirteen months, died in a fit, having been subject to such attacks for the last six months, though otherwise quite healthy. The patches were very decidedly reddened throughout the whole track of the small intestine, though more so in the lower half, and a few were of a deep red color; some thickening, but this was perhaps connected with the age of the subject; no softening. Mucous membrane generally not remarkable. The intestine contained much pasty substance colored by bile, and the mesenteric glands and lacteals were filled with chyle; the stomach also contained a considerable quantity of slightly curdled milk.

I have met with this condition of Peyer's patches many times in cases of sudden death, whether from accident or disease, and once it was found very strongly marked in a horse that was killed on account of some lameness; chyle was generally found in the lacteals, and chyme in the intestine; sometimes the mucous coat of the stomach and duodenum was found reddened, as described by Dr. Yelloley in the *Med. Chir. Trans.*, but oftener not. It should be remarked, that though the patches, as a whole, looked red, the individual follicles, of which they are composed, often appeared white, being filled with a milky secretion which could readily be forced out. The redness of the patches seems to be somehow connected with the process of digestion, and is to be explained in the same way as the redness which is so often seen in the mucous coat of the stomach in persons who have died whilst this process was going on. The above case occurred in the year 1837, that of the horse in 1836, and most of the others within a few years of the same time. 1847.

*Dr. J. B. S. Jackson.*

455. A portion of small intestine, inflated and dried; from a man, who was disinterred, after having been buried four years and eleven months. The whole body was most remarkably preserved, and might have been used for common anatomical purposes, the interior of the bladder, particularly, looking like

that of one recently dead. The individual probably died from the effects of arsenic, though, on a partial chemical examination of the internal organs, none was discovered. 1840.

*Dr. J. B. S. Jackson.*

## II. MALFORMATION.

456. Malformation of the œsophagus, from a patient of Dr. Walter Channing. Superiorly, the canal can hardly be said to exist, as it terminates at once in a cul de sac behind the larynx; inferiorly, it opens freely into the trachea, just above the bifurcation, but below this it is sufficiently well developed. The child lived five days, and died at last, apparently from pneumonia, every attempt to swallow liquids causing great distress, with lividity, and almost suffocation. 1839.

457. A second specimen, similar to the last; from a patient of Dr. J. Bigelow. The child was born at the full period, and well developed. On the second day, it was observed to take the breast with avidity, but, after a few minutes seemed to vomit; liquids, also, when put into the mouth, were immediately rejected; this continued with much distress, and an increasing emaciation, till the eighth day, when it died. Occasionally the respiration was obstructed by a kind of spasm; and there was constantly heard over the chest a mucous, and towards the last a subcrepitous râle.

The upper part of the œsophagus is large, quite muscular, and terminates in a cul de sac about opposite the middle of the trachea. The lower portion, which is smaller, opens freely into the trachea, just above the bifurcation. The stomach was much distended, containing a considerable quantity of brown, viscid fluid, and a large quantity of extremely viscid mucus, which adhered almost everywhere to the inner surface, the membrane itself being softened, as if by the action of gastric juice. The whole of the left lung, except for a trace of healthy tissue at the base, and about one-third of the lower lobe of the right lung, were in a state of the most complete apoplexy, looking like a mass of black-currant jelly. The uterus was malformed, and the vagina entirely wanting, though there was nothing unusual in the external organs. It was found, also,

that the common trunk of the left subclavian and jugular veins entered the right auricle by a separate opening; instead of uniting with the vena cava. The other organs were well formed.

It is remarkable that this malformation of the œsophagus, which is, according to M. Andral, quite rare, has been met with in two other cases, at least, in this neighborhood, one of them terminating in eight days, and the other in about twenty-four hours.

458. Several specimens of diverticula, from the lower part of the ileum, showing the difference of form and size in different subjects. *Dr. J. B. S. Jackson.*

459. Appendix cœci, nearly seven inches in length.

*Dr. J. B. S. Jackson.*

460. Imperforate anus; a dry preparation. From a patient of Dr. J. H. Lane. The child was quite healthy at birth. On the third day vomiting came on with distress; the vomiting continued only a day or two, but the distress was urgent throughout, with great swelling of the abdomen, though the child was kept constantly under the influence of paregoric; became much emaciated, and died on the ninth day. This case occurred in March, 1837, and another infant in the same family has since died of malformation of the heart. (No. 339.)

The rectum was immensely distended, and appeared to end in a cul de sac; on further examination, however, there was found a minute, capillary opening into the urethra just in front of the verumontanum.

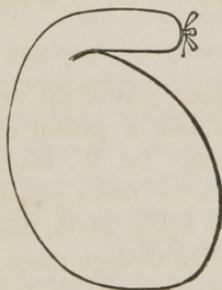
Such an opening as existed here I have seen noticed in the reports of individual cases, but not as a general fact; in every one, however, of six cases that I have as yet examined, i. e. of imperforate anus in the male subject, the rectum appearing to terminate in a cul de sac low in the pelvis, a minute opening has been found into the urethra, and just in front of the verumontanum.

461. A second specimen, similar to the last, the rectum, however, being much less distended; a dry preparation. From a patient

of Dr. George B. Doane. Death occurred on the eighth day, the symptoms being very much as in the last case, except for a remarkable failure in the secretion of urine. A trace of meconium was once observed upon the diaper, having found its way through the opening into the urethra; this I have noticed in one other case. An operation here was attempted, but the rectum was not opened. March, 1837.

462. Imperforate rectum; from a patient of Dr. John Flint. A dry preparation. The intestine runs a straight course, dilates gradually, and terminates rather bluntly in a cul de sac, measuring one inch and a quarter in diameter at that part. The patient, a male child, lived until about the sixth day. The anus was open, and about half an inch of intestine was developed, the imperforate portion being about the same in extent. March, 1846.

463. Imperforate rectum; from a patient of Dr. William J. Dale.



A dry preparation. The intestine dilates abruptly into a cavity of a regular ovoid form, and measures three and a half inches in length, the colon, which is but moderately dilated, being bent strongly upon it, as shown in the adjoining figure. The child was otherwise well formed, and died on the ninth day, having never been much distressed, except once after a

cathartic. 1845.

In another specimen, recently shown to the Society, there was a much more abrupt dilatation than in the present case, and it deserves to be noticed, as similar dilatations do not seem to have been generally remarked, this specimen resembling somewhat in form a junk bottle, as the other does a chemical retort. The lower portion of the intestine was less developed than in the other cases, and would admit a probe only to the extent of one-third of an inch. Another unusual malformation was observed in this case, on a slight examination of the specimen after its removal from the body; the vesiculæ seminales were not found, but in their place a cyst of considerable size and thickness, quite smooth and regular on the inner surface,

filled with viscid mucus, as the vesiculæ usually are, and having a single opening upon the middle of the verumontanum.

464. Imperforate rectum; from a patient of Dr. John Ware. A wet preparation. The upper and lower portions of the intestine terminate in a cul de sac, a short distance from the anus, the impervious portion being about one-third of an inch in extent. From a healthy male infant; had constant vomiting, with much distress, and died on the fourteenth day. The lower part of the small intestine, and the whole of the large, were acutely inflamed, with ulceration of the latter. 1840.
465. Imperforate rectum, as in the last case, but occurring in a female subject; symptoms immediately connected with the malformation were not urgent. On the third day an operation was attempted, in which the posterior parietes of the vagina were extensively wounded, and without opening the intestine; the hæmorrhage was copious, and the child died in seventeen hours. 1839.
466. Rectum opening largely into the upper part of the vagina, from a child about three months old, and a patient of Dr. William J. Walker. A wet specimen. Dr. W. made an opening into the intestine, through which the fœces passed for some time, but, for two or three weeks before death, this was closed, and the discharges passed as before through the vagina. The rectum is seen to have been dilated and the muscular coat much thickened. 1839.

### III. PHARYNX AND ŒSOPHAGUS.

467. Constriction of the fauces from the cicatrization of venereal ulcers, the patient dying of asphyxia and starvation. A piece of whale-bone, stretched across the narrowest part of the canal, shows the circumference to have been only about two-thirds of an inch. 1834.
468. Ulceration of the throat, from a case of scarlatina. It extends across the root of the tongue, and down behind the larynx, laying bare the posterior edge of the thyroid cartilage on the

left side; the epiglottis is still thickened, but was very much so in the recent state; the tonsils and uvula are destroyed, and the whole diseased surface, as well as the mucous membrane of the larynx and trachea, were covered thickly, when recent, with adhesive mucus and lymph. The patient was a little girl, five years old, and had regurgitation with an appearance of strangulation on attempting to swallow liquids, besides other urgent symptoms. 1833.

469. Dilatation of the œsophagus. At the time of the dissection it extended into the right side of the chest, and was so large as easily to admit the fist, the muscular coat being much thickened. The cardiac orifice of the stomach was contracted, but not scirrhus. The specimen, having been dried and cut open, has become much contracted. From a female, about forty years of age. She had had dysphagia for twenty years; great effort required in swallowing, the food being sometimes forced down, and at other times rejected; had sufficient flesh, her general health was tolerably good, and she ultimately died of phthisis. May, 1839.

The specimen was sent in its present condition, with the above account of the case, by the late

*Dr. Charles O. Barker, of Lynn.*

470. Great contraction of the œsophagus. A little girl, two years old, drank some Potash water, prepared for cleaning tripe. For the first week she complained of scalding of the tongue, but was not much sick; afterwards there came on dysphagia, the food being rejected when half swallowed, but not as by vomiting; deglutition occasionally easy. Desire for drink so urgent, that she would sometimes use a bucket-full of water in the course of the night, nearly the whole of which would be regurgitated. Lived three years after the accident, and died from inanition. The lower half of the œsophagus is greatly contracted, and to the extent of about an inch, so much so that, in the recent state, a probe would scarcely pass through. The small portion of the canal which is seen above the contracted part does not seem to have been much dilated. May, 1839.

This specimen was sent, with the last, to the Society by

*Dr. Charles O. Barker, of Lynn.*

471. Scirrhus of the œsophagus, about midway, and to the extent of one inch and a half; there is not much thickening, but the surface is ulcerated, and the muscular coat has the characteristic striated appearance. From a man, sixty-six years of age; had for a long time complained of pain in the throat on swallowing solid food, and vomiting usually followed an hour or two after taking it. When recent, the contraction appeared very much greater than at present. May, 1834.
472. Ulceration of the œsophagus, opening largely into the trachea, just above the bifurcation; from a patient of Dr. A. L. Peirson, of Salem. The disease is two inches in extent, affects the whole calibre of the tube, and has altogether a very unhealthy, if not a malignant aspect. From a female, who had had dysphagia for a year or two, and whose sufferings for the last few months had been very great.

## IV. STOMACH.

473. Stomach, showing the effects of Elaterium. The patient, a young woman, eighteen years of age, took from an empiric, in the course of six hours, two grains and two fifths of the drug, with sixteen grains of rhubarb, and died in forty-two hours. The symptoms were incessant vomiting, with great distress in the abdomen, thirst, and prostration, the countenance appearing as in cholera; the effect on the bowels, however, was very moderate, there being no discharge after the first twelve hours, neither was there any passage of urine during that time. The stomach was enormously distended, and contained a quart or more of a dark brown fluid, giving to the mucous membrane a color which is still well preserved; the orifices of numerous follicles are also seen; when recent, the external surface was greyish and very dry. The intestines were inflamed, and the colon very much contracted. The case was published in detail in the Boston Medical Magazine for July, 1834.
474. Chronic ulcer in the body of the stomach, about an inch in diameter. The organ adhered to the spine at this part, and, on dissecting it up, the base of the ulcer was cut away. From a dyspeptic female, thirty-five years of age.

475. A second specimen of the same. The ulcer is near the pylorus and about one-third of an inch in diameter. From a female, twenty-four years of age, who had been dyspeptic for a year or two; thirty hours before death perforation took place, and she died, as usual, from acute peritonitis.
476. Chronic ulcers at the pylorus; perforation. From a patient of Dr. Morrill Wyman, of Cambridge. Two well-defined, deep ulcers, of a circular form, and about half an inch in diameter, are situated opposite to each other, and just upon the pylorus, a large opening through into the peritoneal cavity being seen in the base of one of them. Between the ulcers is something like a yielding of the parietes of the stomach, forming a shallow, ill-defined cavity, and which might be mistaken for the remains of another ulcer, and just opposite to this, upon the duodenal side of the pylorus, is the same appearance, though to a less extent. The pyloric portion of the stomach was somewhat rough, with slight follicular disease, and two small, ill-defined ulcerations. In the peritoneal cavity was found some recent lymph, besides the liquids and gas that had escaped from the stomach. The patient was a merchant, sixty-three years of age, who had been dyspeptic for a long while, but for the last one or two years much less so, if at all; not subject to vomiting. On the third of May, 1845, whilst walking on his piazza at noon, he complained of a great sense of weight at the epigastrium; at 11 o'clock, P. M., he sent for Dr. W., on account of a pain in the abdomen, and this continued as a marked symptom, though it was by no means urgent, as is usual in these cases; the pulse in the evening, and again towards morning, were but 72, but afterwards became more rapid, with symptoms of collapse, which continued till his death, on the following evening at 10 o'clock.
477. A third specimen of the same; death from hæmorrhage. From a patient of Dr. D. H. Storer; he was a middle-aged man, and complained of pain in his stomach, diminished appetite, constipation, and a general indisposition, though he had not given up his work. A cathartic was given, and on the following day he was better. On the third day he had profuse hæmatemesis, and in the night a second attack, after which he

died. The ulcer is towards the pyloric portion, and near the small curvature, of an oval form, and more than an inch in length. The edges are not thickened and indurated, as usual in these cases, and as is well shown in the other specimens. In the base of the ulcer is seen the open orifice of a ruptured blood-vessel. 1838.

A case, which has been reported to the Society by Dr. A. A. Gould, since the above, may be mentioned here, on account of some peculiarities in its history, the specimen having been exhibited. In the first place, there were two ulcers, instead of one, as usual; secondly, they were situated towards the left extremity, instead of the right, and lastly, as to the mode of death; the patient had no external discharge of blood, but became suddenly very faint, when in the act of brushing her teeth, and died in a few minutes, a large quantity of blood being found in the stomach, and throughout the intestines.

478. Chronic ulcer of the stomach; hæmorrhage, and subsequently perforation. From a patient of Dr. Hiram Hosmer, of Watertown. The ulcer is one inch from the pylorus, in the small curvature, of an oval form, and measures two inches in length; the base, when recent, was of a dark, brownish color, probably from the hæmorrhage, and in it is seen the perforation about one-third of an inch in diameter, and looking, as in similar cases, as if a piece had been punched out. The patient, a laboring man, aged forty-four, had been for many years very intemperate, though much less so for the last six months. For some months he had had pain in the region of the stomach after eating, and in the night had frequently vomited. On the 7th of May, 1845, he had a copious hæmorrhage from the stomach and bowels; the bleeding, however, did not recur after the second day, and he gradually improved, so as to be able, on the 19th, to walk out. At 11 P. M., on this last date, he was awaked by a violent pain in the region of the stomach; an hour afterwards he was found by his physician pulseless, and in a state of collapse, and at 10 A. M., on the following day, he died. On dissection, a great quantity of liquid and food was found in the cavity of the abdomen, but there was no peritonitis.

479. Deep cancerous ulceration of the last two and a half inches of the œsophagus, with thickening and contraction; a small portion of the stomach is preserved, and shows a scirrhus affection of the small curvature, the disease having extended to the pylorus. From a gentleman, seventy-two years of age, a patient of Dr. John Homans. About eight or ten months before death he began to have difficulty in swallowing solid food, and took pudding only, but soon this troubled him, and he abstained almost entirely; pain, and a sense of oppression were felt beneath the lower end of the sternum after swallowing. Soon afterwards he began to vomit his food, with much distress, and these symptoms continued, though, when the stomach was empty, he was sufficiently comfortable. 1830.

480. Scirrhus stomach, from a patient of Dr. John Jeffries. The disease involves the pyloric portion and small curvature, and altogether one-half or more of the entire organ, ulceration having commenced near the pylorus. Muscular coat in the healthy portion not hypertrophied, as described by M. Louis, nor do I remember to have met with this change more than once or twice in these cases. The whole organ was much contracted in size, and seemed to be drawn into the left hypochondrium, the tumor, which was felt during life, being quite to the left of the median line, and sometimes fairly beneath the cartilages of the ribs. The omentum was also scirrhus, as seen in the preparation; a small scirrhus mass was also found in the liver, where it adhered to the stomach. From a gentleman, thirty-six years of age. The symptoms in this case were quite peculiar; about three years before death he began to spit up his food, without nausea, the taste being scarcely altered; this would come on, not at any stated period after eating, but whenever he began to move about, and the quantity thus thrown off was sometimes very great. This attack lasted three or four weeks, and he afterwards had a second, his health during the intervals being quite good. The last attack, which came on five months before death, was probably owing to great anxiety in business, and under this he gradually sank; the chief symptoms were the spitting up of food, as before, an inordinate appetite, obstinate constipation, and great emaciation; he had no uncomfortable feeling at epi-

gastrium, and yet he never could bear pressure there; the tumor was first felt six weeks before death. 1834.

481. A second specimen of scirrhus stomach; sent to the Society by Dr. A. L. Peirson, of Salem. The disease is in the body of the organ, about midway, the extremities being healthy; the entire circumference is affected, and the contraction was such as hardly to allow the passage of the finger, the stomach appearing as if tied round by a band; in the large curvature was a superficial ulcer, an inch in diameter. The patient was Dr. H., of Salem, aged one hundred years and eight months. About four months before his death, which occurred on the 31st of March, 1829, he met with an accident, from which time his health gradually declined, and he suffered from pain in the epigastrium, depression of spirits, and other symptoms of disease. A full account of the case is given in the Memoir of Dr. H., which was published by the Essex South District Medical Society.
482. Extensive and deep cancerous ulceration in the pyloric portion of the stomach. In the midst of this mass of disease, a strip of healthy parietes remains, guarded on each side by a broad, prominent, cauliflower-looking excrescence, as if to secure a passage for the food from the stomach into the duodenum. From an old woman, who died at the Alms-house many years since.
483. Scirrhus of the pyloric portion of the stomach. There is also much disease in the cellular membrane, and in the omentum connecting the stomach with the arch of the colon; the intestine almost adhered to the stomach, and was at one part so much contracted as not to allow the passage of the little finger. There was extensive ascites in this case, and a peculiar, perhaps malignant disease of the ovaries; the specimen is in the Cabinet. The patient was a school-mistress, forty-one years of age, and died at the Mass. Gen. Hospital in April, 1832, having been there two years before with dyspepsia, and hepatic symptoms. About a month before her death there came on a vomiting and spitting up of food, and dark brown matter, with eructation, and much distress at the stomach.

484. Very extensive encephaloid disease of the cardiac portion of the stomach.

V. SMALL INTESTINE.

485. Rupture of the intestine from a kick of a horse. The patient was a hostler, forty years of age, and entered the Mass. Gen. Hospital on the forenoon of January 20th, 1839. Accident happened about twelve hours before; received the blow on the left side of the abdomen, and was immediately seized with violent pain, &c.; not relieved by venesection. On admission, he was in a state of collapse; abdomen exceedingly painful and tender, swollen and resonant at the upper part, but very dull towards left hypogastrium, and without any mark of external injury; hiccough and vomiting; no discharge from the bowels, and was unable to void his urine. Continued to sink, and died about seventeen hours after the accident. On dissection, four hours after death, there was found in the peritoneal cavity about three quarts of a grey fluid, mixed with ingesta; some escape of air on opening the cavity. Great vascularity of the intestines, but this may have been owing to the process of digestion, as the villosities of the mucous membrane in some parts seemed filled with chyle. One perforation was found at the upper part of the jejunum, and two others at some distance below, and within an inch of each other; they were sufficiently large to admit the end of the little finger, and the edges were strongly everted; some recent lymph is seen about them. It was remarkable that, though the parietes of the abdomen were not immediately injured by the blow, there was considerable ecchymosis in the mesentery connected with the ruptured intestine.
486. Hernia of the mucous membrane of the duodenum. Two sacs, about the size of large English walnuts, arose abruptly from the intestine, one being situated just at the opening of the bile duct, as seen in the preparation, and the other about an inch nearer to the pylorus; orifices large, though smaller than the cavity within. As in a case which has been described by Morgagni, (Letter xxxiv. art. 17.) The parietes consisted solely of mucous membrane and a little cellular tissue, the muscular being wholly wanting, though rather thick in the surrounding intes-

tine; mucous membrane, within the sacs, rather thick and opaque. When first seen, in the dissection, these sacs appeared like thin serous cysts. The intestine, having been cut open, the sacs were carefully stuffed, and the whole was then dried over a cylinder. From a man, aged sixty-five, who died from an encephaloid disease of the cardiac portion of the stomach; his death at last was sudden, and owing to hæmorrhage, the stomach and intestines containing large quantities of blood, besides much that was passed from the bowels during life. 1844.

*Dr. J. B. S. Jackson.*

487. Polypus of the intestine; from a patient of Dr. Woodbridge Strong. It consists of a regular, pyriform mass, about one inch in length, and one-third of an inch in diameter at the largest part, fleshy to the feel, and somewhat rough on the surface, but covered apparently by mucous membrane. It arose from the ileum, about one foot from the cæcum, and a portion of the intestine is preserved in connection with it. A portion of the upper part of the jejunum is also preserved, showing a commencing polypus, somewhat of the form, though rather larger than a grape seed, and these two were all that were found, the intestines having been opened throughout. From a woman, aged fifty-eight, who died of acute dysentery. August, 1841.

488. Intussusception at the junction of the small and large intestine, the cæcum being carried forward into the ascending colon. From a child.

In every recent case of intussusception that I have as yet seen, excepting one, (No. 509) it has been at the above situation.

489. A second specimen, similar to the last; from a patient of Dr. John Homans. The invaginated portion, when recent, was of an intensely dark red color, swollen and covered with a bloody mucus, the large intestine containing a thin bloody fluid. The patient was a healthy male infant, seven months old. Having had, in the course of the day, two green discharges from the bowels, but appearing otherwise as well as usual, it was attacked at five o'clock, P. M. with paroxysms of distress,

- which continued to recur, with more or less intervals of ease, till death, at two o'clock, P. M. on the following day. During these attacks it would refuse the breast, roll up the eyes, cry out suddenly, alternately stiffen and relax the muscles, and moan, being apparently in much distress; there was very little nausea, but much tenesmus, with some bloody discharge from the bowels, enemata being returned almost at once. 1833.
490. A third specimen, in which the cæcum and ascending colon are carried forward into the arch. From a patient of Dr. John Ware; a healthy infant, aged four months, attacked on the 9th of August, and died on the 12th, at one o'clock, A. M.; the prominent symptoms for the first two days were vomiting, with dark discharges from the bowels, some of them consisting of pure blood; on the third day less vomiting, but more prostration, the surface being cold, and the pulse small and feeble throughout. 1831.
491. A fourth specimen, in which the large intestine was completely inverted upon itself, so as to be felt per anum. From a patient of Dr. M. S. Perry; an infant, aged six months, and previously quite healthy, except for obstinate costiveness. The attack came on, as her mother said, with a shaking fit, followed by some fever, with occasional paroxysms of severe pain. A cathartic was given, which did not operate, and she became extremely restless, frequently crying out, drawing up the feet, and refusing the breast. Had some tenesmus, with discharge of bloody mucus. These symptoms continued till the third day, when Dr. P. was called. He found the skin hot and dry, pulse 130, tongue nearly clean, countenance rather distressed. Had vomited during the night previous when anything was taken, but had had no discharge since the attack. The abdomen was full, tympanitic, and tender. All the diapers that had been removed during the night were stained with blood, the tenesmus being still urgent, and bloody mucus constantly oozing from the bowels. On attempting to give an enema, the pipe met with some obstruction, and the fluid came away as fast as it was thrown in; a complete obstruction existed about an inch and a half from the anus, and pressure with the finger against it caused severe pain, followed by tenesmus, and

a copious flow of bloody mucus, the nature of the case being then quite evident. Some remedies were tried, but the restlessness, distress, and vomiting increased, and the child died on the morning of the sixth day. 1837.

No tumor was found in the abdomen in this case; in another, however, which occurred not long afterwards, and in which the displacement was equally extensive, there was a distinct and visible tumor upon the left side, with a corresponding depression and feeling of emptiness upon the right side of the abdomen.

492. A sixth specimen, from a patient of Dr. J. Bigelow. He was twenty-three years of age, had had well marked typhoid fever for five and a half weeks, and seemed to be convalescent, when, on the evening of November 1st, Dr. B. was called, and found him with spasms and delirium; this last continued till death, which occurred during the night of the 3d. There was considerable meteorism before death, and on the last evening he vomited some green bile, from which time he sank. Nothing led to a suspicion of the accident which had occurred. On dissection, besides the disease of Peyer's glands, and ulceration of the large intestine, connected with the fever, there was found intussusception, to the extent of three inches, at the junction of the small and large intestine, the latter containing, as usual, a considerable quantity of blood.

In every other specimen of intussusception occurring at this part of the intestine that I have examined, the cæcum has formed the extremity of the invaginated part, and this without any reference to the extent of the invagination; in this case, however, the valve very nearly retained its place, and the small intestine passed on through it to the extent above named, some of the Peyer's patches being seen upon its surface.

493. "Diaphragmatic hernia;" a dry preparation. Several folds of intestine and a great portion of the omentum had passed through an opening in the left side of the diaphragm, the omentum adhering to the pleura on that side, as seen in the preparation. From a patient at the Marine Hospital, Chelsea; he had been stabbed in the side several years before, and was ever afterwards subject to severe attacks of colic, in one of which he died.

*Dr. S. D. Townsend.*

494. Strangulation of the intestine by a band of false membrane. The patient, a young lady, nineteen years of age, and under the care of the late Dr. John Dixwell, was attacked, in the course of the forenoon of June the 18th, with nausea, which was soon followed by vomiting, and which continued almost incessantly till the morning of her death; retention of fæces; abdomen not tense, and pain not urgent; no tumor. Pulse never indicated bleeding until the morning of the 20th, when about  $\frac{3}{4}$  viij. of blood were drawn, after which she sank rapidly, and died at three o'clock, P. M. On dissection, some traces of acute peritonitis were found, besides old adhesions of the omentum to the cæcum and neighboring parietes. A small, rounded, dense band of false membrane, apparently less than an inch in length, was attached by one extremity nearly over the cæcal valve, and by the other to the ileum two feet and four inches from its termination, the intestine to this extent having passed beneath it, and been girt so tightly that now in the preparation the band is nearly buried. The strangulated intestine, which laid altogether in the cavity of the pelvis, was of a deep red color, and moderately distended, but retained its polish, and did not appear cut by the stricture. Just above the strangulation, the ileum contained a considerable quantity of liquid fæces, and the valvulæ conniventes were quite red. 1834.
495. A second specimen, similar to the last; from a patient of Dr. Robert Thaxter, of Dorchester. In this case the band passes from the small intestine to the right ovary or broad ligament, and has strangulated two small folds or knuckles of the intestine, by passing round them in "a figure of 8" direction. The intestine was full of liquid above the strangulation, but empty below, as usual. Old peritoneal adhesions. The patient, a female, fifty-eight years of age, was attacked in the night with severe pain in the abdomen and sickness at the stomach; had the usual symptoms of obstruction of the bowels, and died at the end of a week. 1840.
496. Strangulation of the intestine by means of a diverticulum. This last, arising from the lower end of the ileum, adheres by its blind extremity to the mesentery, and through the ring thus

formed a portion of intestine had passed, and become strangulated. "The patient died at the Marine Hospital, Chelsea, with all the symptoms of bilious colic, having frequently had similar attacks."

*Dr. S. D. Townsend.*

497. A second specimen of strangulation of the intestine by a diverticulum; terminated on the thirteenth day in perforation; from a patient of Dr. James Jackson. Very full notes of the case were taken daily by Dr. Charles G. Putnam, and of these the following is an analysis:—

The patient was forty-six years of age, and had generally enjoyed good health. Six years previously he had had an attack which resembled colic, and lasted eighteen hours; suddenly, as he said, "something gave way," and the symptoms were immediately relieved; five months before death he had a second similar attack. The chief symptoms during his last illness were as follows:—Severe pain in the umbilical region on the first day, but none afterwards until the perforation occurred, excepting a slight, occasional griping; he had, however, a constant sense of uneasiness. No free discharge from the bowels, though he took active cathartic medicine either by the mouth or in the form of enemata almost daily; occasionally brought away scybala, and sometimes a small quantity of liquid fæces. On the sixth day of disease he passed  $\frac{3}{4}$  iv. of blood besides scybala, with relief, on the seventh some membranous shreds, and on the tenth blood with shreds; no tenesmus. There was more or less vomiting for the first six days, and but little, if any, afterwards; never urgent, and not more perhaps than would be occasioned by the cathartics given. Tongue coated, but moist until the tenth day; some appetite, and occasionally took beef or chicken tea, or shells with relish; some tendency to hiccough throughout the disease. Abdomen soft and flaccid; never absolutely tympanitic, and never tender, even on the deepest pressure; no tumor. Skin well, but had perspiration towards the last. Pulse varied from 72 to 88 till the seventh day, but afterwards from 112 to 120; sometimes intermitting every sixth beat, but not otherwise irregular. Began to sink about the ninth day, as shown by the countenance, which had before been calm, the failure of the pulse, and a tendency to sigh, the respiration having previously been

full and easy. Kept his bed throughout sickness, but was generally up several times daily to the close-stool; nights rather wakeful than restless. Besides the treatment above mentioned, the patient had an emetic on the first and fourth days, and was bled  $\xi$  xxiv. on the third; opiates two or three times; abdomen vesicated, and, the cuticle being removed, fomentations of tobacco were applied, but without producing the specific effect. On the last day, having taken a cathartic in the morning, he was suddenly seized about ten o'clock, A. M., with an excruciating pain in the abdomen towards the back; the countenance became livid, and there was no pulse at wrist, though the heart beat as strongly as before; had three discharges from the bowels, with traces of fæcal matter. Took forty drops of laudanum, and the pain was relieved in about an hour and a half. At one o'clock, he wanted to pass his urine, and, the catheter having been introduced, firm pressure was made over the region of the bladder, but without causing pain. Died at two o'clock, P. M.

On opening the abdomen, a thin layer of fæces was found spread over the peritoneal surface, but without any appearance of inflammation. The diverticulum arose from the ileum, forty-five inches from the cæcal valve, and adhered firmly and broadly by its blind extremity to the opposite side of the same intestine, less than an inch from its origin, and forming a loop which would readily admit the passage of three fingers. Through this loop all of the intestine between it and the cæcum, except the last three inches, had passed. The intestine was of a dark red color, and the line of demarcation between it and the last three inches was quite distinct; the strangulation, however, was not so complete but that the intestine was readily withdrawn, and, having been measured, was carefully replaced. The perforation was just at the origin of the diverticulum, and was about a line in diameter. The intestines generally were very moderately distended, and, appearing healthy externally, were not opened. After the specimen had been in spirit for some days, it was cut open to the extent of about an inch, and then was found an ulceration quite through the mucous coat, about half an inch in diameter, and corresponding to the blind extremity of the diverticulum, but, whether recent or chronic, it was impossible to say. 1841.

498. Strangulation of the intestine by the appendix cæci. The patient, a healthy young man, twenty-two years of age, was suddenly seized in the night with violent colic pain in the umbilical region, having previously had two similar, though slight attacks. The pain continued to be urgent, but without tenderness of the abdomen, until the last day; vomiting with much retching, after the first, were prominent symptoms; no free discharge from the bowels, though the most active cathartic medicines and enemata were used daily; no constitutional affection at first, but he soon began to fall off, and died at the end of the fourth day. This case occurred in the practice of Dr. Abner B. Wheeler. On dissection, the extremity of the appendix was found to adhere broadly to a portion of the ileum twenty-seven inches from its termination, and to this extent the intestine had become strangulated. The appendix, when recent, appeared of a dark reddish brown color, as large as the little finger, and much thickened; just at its origin from the cæcum it seemed to be twisted upon itself, and as if strangulated, the transition from the healthy to the thickened portion being quite sudden, as is still seen in the preparation. The intestines generally were very much congested, and above the strangulation greatly distended; mucous membrane of the stomach of a bright scarlet color for the most part, with a considerable development of the glands. 1838.

The occurrence of previous attacks in the above case is interesting, as something of the kind has been noticed in several other cases of internal strangulation which have occurred here; supposing them to have been owing to a partial and temporary strangulation of the intestine, a knowledge of their occurrence would be an important aid in the diagnosis.

499. Strangulation by the appendix cæci, the adhesion of the appendix being probably caused by an old attack of inflammation and perforation, connected with the presence of a foreign body. The patient was a female, aged eighty, and a patient of Dr. Edward Hall. Twenty-one years ago, according to her statement, she had an attack of "inflammation of the bowels," and from that time had been much subject to pain in the abdomen; was also very costive. The symptoms of strangulation came on twelve days before death, and were charac-

terized by an incessant, severe, colic pain in the abdomen, and almost constant vomiting; no dejection, except for a few small scybala which were brought away by enemata; no fever; refused all treatment until the day before her death, when she found that she must die.

On dissection, the abdomen was found quite distended and tense. The large intestine throughout was contracted and pale, the small intestine being discolored, congested, and much distended. No peritonitis. At the distance of forty inches from its lower extremity, following the course of the small intestine, there was an adhesion about over the upper part of the sacrum, the adhesion being not properly of the intestine itself, but of the mesentery immediately adjoining, and the position of the intestine was such that the direct distance from the lower end of the ileum was considerably less than an inch. This adhesion was very close, quite limited, and evidently of long duration; on cutting it away, a cavity was opened, about half an inch in diameter, and immediately there fell out a whitish mass, about the size of a large pea, and consisting apparently of indurated fæces; the inner surface of this cavity had a fistulous appearance, and there was a direct and free communication between it and the adjoining intestine, the opening being sufficient to admit a large probe. The appendix cæci was four inches and a quarter in length; the first two inches and a quarter were pervious and free, and, when the strangulated intestine was withdrawn, formed a ring with the lower end of the ileum which was large enough to allow the thumb to pass freely through; the rest of the appendix seemed to be reduced to an impervious cord, and was closely adherent, in the first place to the ileum, which it traversed about one inch from its lower extremity, and next to the mesentery between the termination and the adherent portion of the ileum, the extremity of the appendix corresponding very nearly with the cavity which contained the foreign body. That portion of the ileum which was traversed by the appendix was as it were indented, and extremely thin, as if from some former disease, perhaps ulceration. The strangulated portion of intestine consisted of the whole forty inches between the lower end of the ileum and the point of adhesion, and, though pretty tightly girt, was withdrawn without any great difficulty, after it had

been cut open for examination and emptied of its contents. The mucous membrane of the small intestine was generally congested, and just above the strangulation were several defined ulcers, which were evidently the result of acute disease; above this part the intestine was not examined. In the other organs there was nothing remarkable, except a retroversion of the uterus, the fundus of the organ lying directly back against the rectum; the organ itself was crowded with fibrous tumors, and perfectly knobbed, though not enlarged, one of the tumors being developed in the broad ligament, and at some distance from the uterus. In the preparation the strangulated intestine has been again passed through the yoke formed by the appendix, and the relation of the parts, with most of the other points above described, may be distinctly seen. April, 1847.

500. Ulceration of Peyer's glands in typhoid fever. The ulcers are perfectly defined, with raised, rounded edges, of a nearly circular form, and varying from about three to eight lines in diameter, a loose, flocculent, ash-colored slough hanging from the base of several of them. There was also in this case extensive pneumonia, tending to gangrene. The patient, a female, thirty-two years of age, died at the Mass. Gen. Hospital, October 21st, 1833, having been sick two weeks, with considerable diarrhœa, though the local symptoms were mostly in the head.
501. A second specimen, in the same jar with the above, both of them being distended upon a flat surface. The patches are very much larger than in the first case, quite firm, and much raised, as if from some change in the submucous cellular tissue, the edges being rounded, and in some parts projecting over the base; ulceration extensive, but not so continuous over the patches as in the first case. From a young man, who had been sick about three weeks. 1835.
502. Crystals upon the mucous membrane of the ileum. From a middle aged man, and a dissecting-room subject; nothing was known of his case; but, from the ulceration of Peyer's glands, and the discoloration, there could have been no doubt that he

died of typhoid fever, and that the disease had been of some weeks duration. A few minute crystals were found in the thin fæces contained in the lower portion of the ileum, but upon the mucous surface of this intestine were very considerable numbers, which were sufficiently large to be seen at some distance, and though easily detached, were decidedly adherent. There were some in the jejunum also, and upon the serous surface there was a very abundant crystalline deposit, which will be noticed in another place. In the preparation, a portion of the ileum has been dried upon a black board, and the crystals are thus distinctly shown.

Another portion of the intestine having been handed to Mr. Joseph Peabody, a student in chemistry in Dr. Charles T. Jackson's laboratory, a few of the crystals were scraped off and examined. A full report of his examination was read to the Society, by which it appears that the crystals, which he describes as translucent and prismatic, consist mainly of the phosphate of lime, with some other acid, probably the sulphuric, but without any trace of magnesia. 1847.

*Dr. J. B. S. Jackson.*

503. Acute inflammation of Peyer's glands; from a case of dysentery. (See No. 514.)
504. A portion of dried intestine, showing an increased vascularity in Peyer's glands. The patient was twenty five years of age, had had sore throat, with symptoms of disordered stomach for about two days, when he was taken with active delirium, and other marks of congestion of the brain, and died in about thirty hours; had been under the care of Dr. George Hayward. Many of the patches about the middle of the intestine were thickened, softened, and of a dull red color, the sub-mucous cellular tissue being more red than the patch itself; higher up they were thick and soft, but scarcely red; the follicles were generally quite distinct, especially in the patches at the lower end of the ileum, and in those which were red they appeared to be filled with a whitish secretion. There was no other disease of any consequence, the brain and membranes being perfectly healthy. It was thought that this might possibly have been a case of scarlatina. 1837.

505. A portion of membrane, of a perfectly tubular form, and measuring more than four feet and a half in length. It was discharged from the intestines of a man who was convalescent from fever, and was sent to the Society by Dr. A. L. Peirson, of Salem, as a specimen of false membrane. From the firmness of the membrane, however, and from the appearance as of muscular fibres and of blood-vessels upon it, it has been regarded by some who have examined it as the mucous membrane itself which has been detached with more or less of the subjacent tissue.

506. Perforation of the duodenum through a small, chronic, solitary ulcer, about one-third of an inch from the pylorus. From a man, twenty-six years of age, who had suffered much from dyspepsia; fatal symptoms came on twenty-six hours before death, and, on dissection, there was found, as usual, acute peritonitis; a patient of Dr. Ezra Palmer.

Several other cases have been observed here, showing the resemblance between the chronic ulcer of the duodenum and that of the stomach; in two of them, besides the above, perforation occurred, and in another there had been several attacks of active hæmatemesis a few months before death.

507. Cancerous disease, with great dilatation of the small intestine. The patient, who had been under the care of Dr. Charles G. Putnam, was a healthy little girl, six years of age, and began to complain of pain in the abdomen in December, 1839, lasting but for a few minutes, and recurring once or twice a week for about six weeks; it then left her, and did not afterwards return. In April, 1840, she had severe pneumonia, from which she entirely recovered. In June, she had a hot skin, quick respiration, restless nights, and an enlargement of the abdomen, but without pain or tenderness on exercise or on pressure; her appetite was pretty good, but she would soon leave the table, from a sense of fulness. In August, a distinct tumor was felt in the right iliac region; this always remained, and was found after death to be a diseased ovary; the specimen is in the Cabinet. Towards the last, she became greatly emaciated, with almost constant perspiration, and quick breathing, but retained considerable strength, and rested better. For some

months before death the bowels were irregular, with a tendency to diarrhœa. Never any symptoms referred to the kidneys, though these organs were greatly diseased, one of them being preserved in the Cabinet. Died rather suddenly, November 23d, 1840.

On dissection, the omentum, mesentery, and inner surface of the abdominal parietes generally were loaded with a whitish, homogeneous, lardaceous tissue, almost every trace of fat having been absorbed from the integuments; the same, though less in amount, was found about the pericardium and heart; some serous effusion; ovaries and kidneys diseased, as will be hereafter described. About twenty inches from the cæcum the small intestine dilated abruptly into a rounded sac, capable of holding twenty ounces or more, and filled with soft fæces and gas; the parietes were sufficiently thick, and seemed to consist mostly of the morbid deposit, which was everywhere so abundant; inner surface rough as from ulceration. This sac was formed opposite to the mesentery, and the outlet from it being at the distance of only two inches from the entrance, the analogy to a form of aneurism, as sometimes seen in the aorta, was at once suggested. The intestines otherwise were sufficiently healthy.

In June, 1846, a case occurred in the practice of Dr. Henry G. Clark, which so strikingly resembled the one just related, in its most remarkable points, that it should be mentioned in connection with it. The patient was a delicate little girl, four years old, and was not thought to be sick till about three weeks before her death, when she began to lose flesh, strength, and color, but without any very marked local symptoms; some vomiting at first, from an especial cause, but not afterwards, the stomach and bowels being sufficiently well. The abdomen was tumid, but without pain or tenderness. About two weeks before death, Dr. C. felt two large, defined, quite movable tumors, one in each iliac fossa, and directed upwards and outwards; these were found, on dissection, to be diseased ovaries, one of them being half as large as the fist, and the other half as large again as the fist. There was also in the upper part of the abdomen, upon the right side, a large solid tumor, which was found after death to be connected with an aneurismal-like dilatation of the small intestine; the dilatation was perfectly

abrupt, situated about three feet from the lower end of the ileum, had a regular, rounded form, would hold about a pint, and was partly filled with fæces; the parietes of the sac consisted mainly of the lardaceous deposit, and the whole abdomen, as in the first case, was loaded with the same, but with some intermixture of the encephaloid.

## VI. LARGE INTESTINE.

508. Hernia of the mucous membrane of the large intestine, from a lady who died from an encephaloid disease of the arch of the colon. The sacculi were twelve or fifteen in number, situated between the muscular bands, and between the disease and the ascending colon; they were quite thin, and from two to four lines in diameter, though considerably smaller at their orifices. A dried specimen. This affection I have met with in the large intestine in three other cases, and in each of them it was about the sigmoid flexure; one of the patients had had chronic ulceration of the stomach; the other two, as in the above case, had cancer of the large intestine, but above the seat of the herniæ, and one of them died at last from peritonitis induced by a rupture of one of the sacculi. 1847.

*Dr. J. B. S. Jackson.*

509. Intussusception of the rectum. The intestine is completely doubled upon itself, and protruded about half an inch from the anus. From an old woman, who had been subject to hæmorrhage from the bowels for a year previous to her death. The fatal attack lasted ten days; came on with great and constant hæmorrhage, distress, and a sense of bearing down as in labor; there was no vomiting until the last four or five days, and no discharge from the bowels, except for a single, small, scybalous mass, enemata being always immediately rejected. 1839.

*Dr. George C. Shattuck.*

510. A portion of small and large intestine, showing an ulcer in this last, which was the source of fatal hæmorrhage; from a case of typhoid fever. The patient was a young lady, fourteen years of age, who had had the disease for about sixteen days, but without diarrhœa, the symptoms being so mild that her

physician, Dr. Hayward, was not sent for until three hours before death, when the hæmorrhage commenced. During these three hours she had four or five discharges, each of them consisting of about a gill of florid blood, besides an almost constant oozing from the bowels of the same. On dissection, the usual appearances were found in Peyer's glands, the mesenteric glands, and the spleen. The large intestine contained  $\frac{3}{4}$  viij. or  $\frac{3}{4}$  x. of fresh liquid blood, some having passed up into the ileum. In the cæcum and ascending colon were twelve or fifteen spots of recent disease, some of them only being ulcerated; one of the deepest ulcers, situated very near to the cæcal valve, and measuring one-third of an inch in diameter, was shown to be the source of the hæmorrhage by having a dark red coagulum hanging from its base. 1837.

511. Acute inflammation, with gangrene and perforation of the appendix cæci; no foreign body found. About this part, a large, circumscribed abscess had formed, but the peritoneum generally was healthy. The patient, a lad ten years of age, died rather suddenly, in convulsions, on the fifth day of the disease. The pain in the abdomen was never severe; there was very little vomiting, and the bowels acted from medicine. 1838.

512. A case similar to the last, but in which a foreign body was found in the appendix cæci. The patient, a stout, muscular man, twenty-two years of age, had eaten a great number of pea-nuts in the evening, and was attacked in the night with vomiting; this ceased on the following day, but he felt indisposed, and kept the house; on the third day he did some work. On the fourth day pain in the abdomen came on, and was constant until his death, increasing every few minutes, and darting so as to make him cry out. The whole abdomen was very tender and tense, but not swollen until towards the close of the disease; vomited two or three times daily, without retching, but as if from over-distention of the stomach. Bowels open on the day before the attack, but never freely after that time, though the most active medicines were used, this obstruction being regarded as the most important point in the case, and towards which all the treatment was directed. Pulse and skin natural, though there had been chills early in

the attack. Duration of the disease one week. This case occurred in the practice of Dr. Daniel T. Coit.

On dissection, there was found a general though slight peritonitis, and a small, circumscribed abscess about the appendix cæci; this last generally exists in these cases, and here it was formed by the appendix on one side and by a fold of small intestine on the other, the cavity containing about 3 ij. of thin pus. Outer surface of the appendix, to the extent of one-third of an inch or more, quite soft, blackish, and evidently gangrenous, there being some discoloration of the intestine opposite; inner surface ulcerated, but not gangrenous, the cavity containing pus like that in the abscess, and also a pea-nut, which was very little, if at all changed; perforation through into the abscess two lines or more in diameter. The small intestine was much distended with gas, and a thin, yellow liquid, and was greatly congested if not inflamed, the mesenteric glands being affected as in typhoid fever. Large intestine rather contracted. In this preparation and the last the appendix only has been preserved, and the two are contained in the same jar.

513. Calculus from the appendix cæci; a similar case to the last, and occurring in the practice of Dr. J. Bigelow. The patient was a healthy female domestic, and died on the fifth day of the disease, the chief symptoms having been colic pain, with tenderness of the abdomen, nausea, and vomiting, and, for a part of the time, obstinate constipation. In this, as in several other cases that have occurred here, the fatal attack came on after an inordinately hearty, or very unusual meal. The calculus, in this case, is pear-shaped, and seven and a half lines in length, fawn-colored, quite smooth, and moderately hard; when recent, it was thickly coated with a soft substance, having no appearance of fæces, but seeming to consist of the same material not yet hardened. There was a second smaller calculus, which, on being analyzed by Dr. M. Gay, was found to consist of the phosphate of lime and magnesia, with some animal matter, and, on breaking it open, there was found in the centre a dark nucleus, the nature of which was not ascertained; this is also preserved. The appendix also contained some of the soft substance above alluded to, with gritty matter in its centre, being, as it were, a third calculus in the earliest

period of its formation. The general condition of the appendix and of the peritoneal cavity was very nearly the same as in the last case. There was, however, less inflammation of the appendix, the gangrene seeming to be almost a primary change, and the same was observed in some of the other cases above referred to. The lower end of the ileum formed the opposite wall of the small abscess about the appendix, as if the object of nature had been to discharge the foreign body into that portion of the intestine. The opening of the appendix from the cæcum was so small as hardly to admit the head of a pin.

514. Intestine from a case of acute dysentery. The large intestine was throughout completely covered with lymph, which was easily scraped off, and showed the mucous membrane beneath of a bright red color, thickened, and soft. Throughout the lower two-thirds of the small intestine Peyer's glands were similarly, though rather less affected. Portions of the large and small intestine are preserved in the same jar. The patient, an infant aged fourteen months, died on the fifth day, having suffered from the disease in a very severe form. The case occurred in the month of March, and in the practice of the late Dr. Charles T. Hildreth; in the course of a few weeks there were four other cases of this disease in the same house, and the mother died of it on the day after the infant was attacked. 1834.
515. Portions of the large and small intestine contracted and thickened, the mucous membrane being rough, covered with lymph, and of a dark greenish color, as if stained by the contents; the ileum is also seen to be marked by strong transverse rugæ. The disease was quite extensive, and the patient, a healthy little girl, eight years of age, died after an illness of a week's duration, with symptoms much resembling those of internal strangulation. She had been under the care of Dr. Minot C. Weld, of Jamaica Plains. 1841.
516. A portion of large intestine, showing numerous, small ulcerations.
517. A portion of the sigmoid flexure, showing a large, deep, and broad ulcer, which involves the whole circumference of the

intestine. From a boy, aged four years, affected with general tuberculous disease, and for the last five months, with diarrhœa.

518. Stricture of the intestine at the junction of the arch and the descending colon. The patient, a female, aged twenty-nine, had been sick about four weeks; the symptoms were very urgent, and were mainly a colic pain in the left side of the abdomen, vomiting, and constipation, a great deal of cathartic medicine having been given, besides enemata, from which she had occasionally a small discharge. The diseased portion was about half an inch in extent, felt as dense externally as a scirrhus pylorus, and was so contracted that water poured in above, after the parts had been removed, would not run through. Having been cut open, the transverse diameter at the seat of disease was found to be two-thirds of an inch; the induration affected about one-half of the calibre of the intestine, and upon the inner surface was a superficial, ill-defined, ulceration or abrasion, such as is often found in scirrhus of the stomach, the comparatively healthy portion, which was the part cut through, being thickened, though not indurated. Above the contracted part the intestine was much dilated, and there was acute inflammation, as shown by numerous small, red, deep ulcerations, one of which, two inches above the seat of the stricture, was perforated, and gave rise to peritonitis, which was the immediate cause of death. Below the stricture the intestine was contracted, and quite healthy, as were the organs generally. This case, which was most perfectly diagnosed, occurred in the practice of the late Dr. Charles T. Hildreth. 1837.

519. Cancer of the rectum. The patient, a female, about thirty years of age, had had no discharge from the bowels for two or three weeks before her death, and died from the effects of the obstruction. The disease commences two inches from the anus, and extends upwards from three to four inches, being sufficiently well defined. All of the tissues are more or less thickened and otherwise diseased, but particularly the muscular coat, which, at one part measures four and a half lines, and has throughout the well marked character of scirrhus; the cellular membrane, also, between the intestine and the sacrum,

is indurated, and with the fat forms a solid mass an inch in thickness. The passage through the diseased portion is irregular, and much contracted, and upon the inner surface there is an ill defined, cancerous looking ulceration, which has penetrated in some parts entirely through the parietes of the intestine. Above the diseased part the rectum is dilated, and the muscular coat thick and fleshy. Just below the seat of the disease, but in a perfectly healthy part of the intestine, there is a clean, longitudinal slit, five lines in length, and opening into a considerable cavity in the recto-vaginal parietes; from this last there is an opening, between two and three lines in diameter, into the upper part of the vagina, and from this there hangs out a slough of cellular membrane, about an inch in length; the uterus was healthy, and has been cut away in the preparation. The lower portion of intestine is seen to be otherwise healthy, except for enlarged veins and hæmorrhoids. The specimen was sent to Dr. Edward Reynolds by Dr. Joel Burnett, of Southborough. 1838.

520. Disease of the rectum, probably malignant, but differing entirely from the usual forms of carcinoma. The patient, a gentleman, forty-five years of age, began to have symptoms of the disease four years before death; pain low in the back, and difficulty in evacuating the bowels, with discharges of blood, which were sometimes profuse, the pain increasing towards the last so as to require very large doses of opium. Constipation also was a very urgent symptom, six grains of the extract of stramonium, as a suppository, producing the most relaxing effect, which would last for many hours, but without evacuating the bowels. The skin was always sallow; the stomach never became irritable, and the appetite continued to the last, though the emaciation was very great. On dissection, the large intestine was enormously distended, but was internally healthy, except in the rectum, where the disease began, two inches above the anus, and extended upwards four inches; it affected the whole circumference, and seemed to consist of soft, fungous, cauliflower excrescences, which obstructed the intestine as completely as it would have been by a soft sponge. The disease is more advanced inferiorly, and is there well defined, but is rather less so above; on the cut edge there is no distinction

of tissues now to be seen, neither is there any appearance of scirrhous nor of the encephaloid deposit. The preparation, however, had been in spirit for some time when examined, a figure of the specimen with an account of the case having been published by Dr. A. L. Peirson, of Salem, in the New York Med. and Phys. Journal for 1825, (Vol. iv. No. iii.)

521. Fistula in ano, occurring in the last stages of phthisis. The patient, a man, forty-eight years of age, died at the Mass. Gen. Hospital in October, 1838, having been sick nearly eighteen months. Three weeks before death an abscess formed, which soon burst, and has left two separate openings just outside of the verge of the anus. The fistulæ within also appear to be separate, extending upwards nearly two inches, and not communicating with the rectum. The cavity of another abscess, also, which was opened in the course of the dissection, is seen just above the anus.

#### VII. FOREIGN SUBSTANCES.

522. A Snail's shell, showing the action of the gastric juice; from the stomach of a frog.
523. The gizzard of a pigeon, transfixed by a pin.
524. Hair-ball from a Cow's stomach. In form, color, and size it resembles a large Ostrich's egg, being smooth and polished on the surface. Sixteen others, of various sizes, were taken from the same animal.

*Dr. Charles G. Page, of Washington.*

525. A second specimen, from another subject; it is about the size of an orange, somewhat flattened, and of a dark brown color, but perfectly smooth, and, as it were, glazed upon the surface.

*Boston Society of Natural History.*

526. "Two hair-balls from the stomach of a Hog, which had been fed on the fleshing from a tanner's yard." One is about the size of a hen's egg, and the other about as large as the double fist; they differ entirely from the two specimens above

described, in their form, general appearance, and composition, being made up, not of hair alone, but of a mixture of mud and hair. 1840. *Dr. Willard Adams, of Woburn.*

527. Shot from the appendix cæci. The patient, an old gentleman, eighty-eight years of age, died of chronic disease, never having had any symptoms of trouble about the appendix; neither was this organ found to be diseased, nor in any way remarkable, except that it was unusually long. The shot, one hundred and twenty-two in number, are of the size commonly known as robin-shot, and several of them are flattened, having facets like prostatic calculi. Their presence is explained by the fact that the old gentleman, who was a great epicure, was in the habit of indulging very freely in the use of wild game.

*Dr. C. C. Holmes, of Dorchester.*

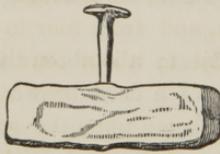
528. A Penknife, which was swallowed by a child between three and four years of age, and passed from the



bowels after the expiration of fifty-one hours, the child in the mean time, as the father stated, "playing about as usual, and not minding it in the least." The knife, being a very small one, has been represented, in the adjoining figure, of the full size; the blade is dull, but was open at the time that it was passed. 1838.

*Dr. George C. Shattuck.*

529. A block of lead nearly an inch in length, and one-fourth of an inch in diameter, with a nail driven into it; swallowed by a child, three or four years old, and passed from the bowels in about as many days, causing meanwhile no inconvenience; it is intended to be represented in the adjoining figure of full size.



1845.

*Dr. Z. B. Adams.*

530. A silver pencil-case, three inches and a quarter in length, which was swallowed by a young man, and passed on the fifth day, causing no trouble until it reached the anus, where it met

with some obstruction, but was removed without difficulty.  
1841.

*Dr. D. H. Storer.*

531. Small pieces of glass swallowed, and passed by stool; from an insane patient, who entered the McLean Asylum in February, 1828, and was discharged well in about eight months; he was twenty-one years of age, despondent, and quite suicidal. July 8th, he swallowed some pieces of a mirror; one piece passed on the 10th, and the rest on the 12th and 13th. August 22d, whilst walking in the yard, he found and swallowed more glass, and on the 24th, discharged several large and many small pieces. They are preserved in separate jars, and would altogether about fill a table-spoon. November, 1846.
532. A large piece of cotton cloth and a piece of blanket, which were swallowed, and passed by stool. The patient was twenty-five years of age, entered the McLean Asylum in the year 1822, and died on the 13th of September, 1823. In December, he had "pieces of cloth, buttons, &c. pass off by stool;" on the 11th of June, he vomited a piece of blanket, having been sick through the day, and on the 18th, the record is as follows: "at stool has passed pieces of woollen blankets, and large pieces of his shirt, which he probably swallowed some days since, and have been probably the cause of his distress and sickness. One piece swallowed was two and a half feet in length and from four to ten inches in width—another narrow, but nearly as long."
- The piece of cotton, which has been preserved, is irregular in its form, and consists of one nearly square piece, which measures twelve by fourteen inches, and an appendage which measures seventeen inches in length, and from four to six in width. The piece of blanket is equal to about four inches square. November, 1846.
533. A glass jar, containing a variety of articles which had been swallowed at different times, and passed by stool; they consist of nails, screws, pieces of pewter spoons, &c., and weigh altogether half a pound. The patient was a sailor, thirty-three years of age, and became insane at sea; entered the McLean Asylum February 29th, 1828, and was discharged relieved in

about seven months. On the day of his admission he had swallowed a thimble, and on the following day he took medicine, and discharged the "thimble, a large wrought board-nail, a horn pick, and pieces of cloth, thread, &c." Three of the nails measure, each of them, nearly three inches in length; the "horn-pick" is rather longer and has a very sharp point. November, 1846.

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## VIII. ORGANS ACCESSORY TO THE ALIMENTARY CANAL.

### I. TEETH.

534. The upper maxillary bones of a child, showing the two sets of teeth. *Dr. Winslow Lewis.*
535. The molar tooth of a Cow, ground down and polished, to show its structure. *Dr. Jeffries Wyman.*
536. An upper maxillary bone, showing the projection of the dens sapientiæ into the antrum.
537. Cranium of a Marmot, or Woodchuck, (*Arctomys monax*,) showing a preternatural growth of the incisor teeth, which is observed in the rodentia when the antagonizing incisors are lost or are diverted from their usual direction. The lower jaw is wanting. The left incisor makes somewhat more than a complete circle, its point having penetrated the alveolar edge of the upper maxillary bone upon the right side, and appearing beneath the root of the incisor tooth of that side; this right incisor may have been equally developed, but appears to have been accidentally broken. The perforation in the superior maxillary bone by the left incisor is remarkably smooth, and as perfectly free from any appearance of disease, as if it were a natural opening.
538. A second specimen, similar to the last. The lower jaw has

been preserved in this case, and the upper and lower incisors are seen to deviate much from their usual direction and to be much elongated. 1847.

*Boston Society of Natural History.*

539. A tooth almost buried by an incrustation of tartar, the whole forming a mass about as large as the top of the thumb.

*Dr. William E. Coale.*

540. A jar filled with teeth in various states of disease.

## II. MESENTERY AND PERITONEUM.

541. An abscess in the mesentery, opening into the cavity of the intestine. From a patient of the late Dr. Charles T. Hildreth; a little girl, seven years of age, who died with the usual symptoms of phthisis, the bowels having been generally rather loose, and very much so when she took animal food. The mesenteric disease consists of a mass of suppurating glands, altogether two inches or more in diameter. Connected with this mass are two folds of small intestine, which adhere together externally; upon the inside of each of these folds, and at the point of adhesion, is an old, defined ulcer, which extends around the entire circumference of the intestine, and through these ulcers there is a common opening into the cavity of the abscess. The intestine was otherwise healthy, except for a trace of tuberculous disease in Peyer's glands. Lungs &c. tuberculous. This mode of termination of mesenteric disease must be quite rare; and it is remarkable that in the same subject, an abscess in the situation of the bronchial glands was found to communicate with the œsophagus. (No. 447.) 1838.

542. Mesenteric glands ossified, from different subjects, and varying in size from a pea to that of a pullet's egg.

543. An ossified mesenteric tumor; sawed open and dried. It was about the size of the double fist, when recent, and was, in structure, partly fibro-cartilaginous, but for the most part ossified. At one extremity is seen the distinct outline as of an ossified, mesenteric gland. The small intestine was deeply

imbedded in the tumor, and, having been cut open, there was found hanging, as it were from its interior, and by a small pedicle, a rounded tumor about the size of an English walnut; this last did not appear to be ossified, and is of course much shrunk in the preparation. From a patient of Dr. John Ware; a boy nine years of age, who had been sick for about a year, had had a hard, knobbed tumor in the abdomen, with pain in evacuating the bowels, and extreme emaciation. 1832.

544. A portion of the abdominal parietes, showing a regular, rounded, pendulous mass of encephaloid disease, about the size of an English walnut, and growing from the peritoneal surface. The cavity of the abdomen was filled with similar masses, varying from the size of a pin's head to that of the fist. They were generally encephaloid in their structure, with more or less effused blood; the smallest, however, appeared semi-cartilaginous, and the largest were decidedly fibrous. A small mass was found upon the interior of one of the Fallopiian tubes, and there was some appearance of disease in one of the ovaries, but otherwise the organs of the abdomen were not at all affected. From a patient of Dr. Daniel T. Coit; an excessively corpulent woman, sixty-two years of age, who had been complaining only for nine or ten weeks; ascites and great irritability of the stomach were the principal symptoms; bowels constipated; very little if any pain in abdomen. 1833.

This form of carcinoma, in which the peritoneal cavity is found to be filled with masses of disease, the organs themselves being healthy, does not seem to be very generally noticed, though it has been several times observed here.

### III. LIVER.

545. Cast, in plaster, of a fractured liver; a case remarkable for the mildness of the symptoms. The patient, a little girl, between four and five years of age, was run over by a baker's cart, about eight o'clock on Monday morning, (Sept. 5th, 1837); through that forenoon she kept upon the bed, and was often faint, but felt no particular uneasiness; in the afternoon she was down stairs, and on the floor with her playthings about her. On Tuesday, she was out upon the side-walk in front of the

house. On Wednesday, she went out upon the Common, which was at some distance from where she lived, and there, as her mother said, she played about and rolled upon the grass. Whilst returning home, there came on distress at the stomach, which continued through the night, and was at times quite urgent; had also much nausea and retching, with cold perspiration. On Thursday, she was much relieved, and the symptoms did not again recur with the same severity. From this time, however, until her death she kept on the bed, though she was sometimes able to enjoy her playthings; had frequent fainting turns, but did not suffer much. Slept well through Thursday and Friday nights, but seemed on the whole to be rather losing strength, and, for the last day or two, there was a peculiarly wild expression, as if from severe internal injury. No material change was observed on Saturday morning until eleven, A. M., when she suddenly fell off and died before twelve o'clock.

On examination after death, the whole surface of the body had an icteritious yellowness, a symptom which existed in several other cases which have occurred here, and may be regarded as one of the diagnostic marks of the accident. The abdomen was tumid, and somewhat bruised over the lower part, but not at all about the right hypochondrium; neither was any bruise found about the region of the liver in the other cases just referred to; this fact has often been noticed in regard to the liver, and the same observation might be extended to the case of injury of some of the other abdominal organs from external violence. The cavity of the peritoneum contained about half a pint of blood, mostly liquid; no appearance of acute inflammation. A large mass, equal to two inches and a half in diameter, or more, was broken almost off, or entirely so, from the right side of the right lobe of the liver, and stood out very prominently from the anterior face of the organ, the fractured portion appearing in structure like any other part. The peritoneum was stripped up from almost the whole anterior face of the right lobe of the liver, and beneath it was a thick layer of coagulated and liquid blood. Blood was also found in the pleural cavity, with some ecchymosis.

546. A section of the liver, to show the structure of the organ, in

case of cirrhosis. From a man who died at the Mass. Gen. Hospital, April 25th, 1838, of apoplexy; he was very corpulent, and had been quite intemperate; no ascites.

547. Cirrhosis. The liver is so reduced in size that the whole organ is exhibited in a quart jar. Externally it is granulated, and very irregular in its general outline. Internally the granules are quite distinct; the intervening, hypertrophied, and condensed cellular membrane is also very marked, and gave the usual indurated feel. When recent, the color was yellow, mottled with red. The patient was a young lady, nineteen years of age, and had been under the care of Dr. J. Bigelow, who gave the following history of the case:—Was subject to headache, and had several times had erysipelas of the face. In July, 1839, she was attacked with febrile symptoms, confining her for a week, and was afterwards absent from the city for a month or two with indifferent health. In September, Dr. B. found her complaining of pain and fulness of the abdomen, with increased pulse and heat, diminished appetite, costiveness, scanty urine, and disturbed sleep. On examination, a considerable enlargement of the abdomen was found, with slight fluctuation, and in the left hypochondrium, a solid tumor, moderately sensible to pressure, and extending two or three inches below the cartilages of the ribs. The ascites after this increased, and there came on a general œdema of the lower extremities, and of the whole trunk. Occasionally there were attacks of head-ache, pains about the abdomen, nausea with vomiting, and a yellowness of the skin and eyes, but, when relieved from these symptoms, she pursued her usual occupation for several days at a time, and took short rides without fatigue. Twice during the autumn the ascites subsided, once under the use of digitalis, and once under a spontaneous diarrhœa, and at each of these times the tumor in the left side could be felt. In April, May, June, and July she was tapped, and from two to three gallons of fluid were drawn off at each time, the tumor being felt as before after each operation. Towards the end of June the patient rode out for the last time, with much pain and fatigue. The anasarca had become excessive, and dyspnœa with physical signs of effusion into the right pleural cavity supervened. The anasarca after this

gradually subsided, and rendered apparent an excessive emaciation; the countenance became haggard, and the skin excessively yellow; pain in the abdomen, distress, nausea, and dyspnoea appeared and disappeared on various days. She sat up and occupied herself with sewing for the greater part of a day, about a fortnight before her death, which took place suddenly, on the 29th of July, after the vomiting of a pint or more of a blackish fluid.

On dissection, besides the disease of the liver, the spleen was found much enlarged, and formed the tumor which was felt during life. The peritoneal cavity contained about two gallons of serum, with a soft false membrane over the intestines; there was also an effusion of serum in each pleural cavity, and into the lower portion of both lungs. The stomach contained nearly a quart of dark, brownish fluid, and throughout the small intestine was found a dark, viscid, tar-like fluid. There were some traces of effused blood about the organs, but otherwise they were healthy.

548. Old tuberculous disease in the liver; an opaque, white, curdy mass, about the size of an English walnut, and surrounded by a firm cyst. Organ otherwise healthy. From a patient of Dr. Z. B. Adams; a young lady, fourteen years of age, who died of acute disease, her previous health having been quite good. 1840.
549. Abscess of the liver. A portion of the organ is preserved, showing a cavity which would contain a gill or more, well defined, though rough on the inner surface, and, when recent, containing pus and mucus, apparently tinged with bile. This cavity was near the under surface of the right lobe, and communicated with the duodenum, and there were also in the substance of the organ two other small cavities which were filled with pure pus. The liver itself was small, dark, and universally adherent. The patient, a Scotchman, fifty-seven years of age, had been on the Western coast of Africa for the last twenty years, engaged in the slave trade, his general health being good, though he had had the fevers of that region. In May, 1843, after great exposure, he was attacked with dysentery, which was very severe for a time, and continued more

or less until his death. In September, he arrived here, entered the Mass. Gen. Hospital in a state of extreme marasmus, and died in about ten days; surface very pale, but not at all yellow; lower extremities œdematous. Extensive ulceration was found throughout the large intestine, but in a state of cicatrization. There were also in the duodenum, within an inch of the pylorus, two ulcers, each half an inch in diameter, and one of these communicated with the abscess in the liver.

550. A deep fissure, or notch in the edge of the right lobe of the liver, as if there had been a destruction of a portion of the organ at some former period. From a patient of Dr. A. A. Gould; a female, about forty-five years of age, who died from extensive cancer of the breast and liver, this disease, however, having no connection with the fissure. 1838.
551. A dried specimen, showing the spiral valve of the cystic duct.
552. Congenital deficiency of the gall-bladder; from an adult subject. On the most careful examination there was no appearance of the organ having ever existed; such cases have been met with here, as well as elsewhere, in the fœtus and very young subjects, but its occurrence in the adult must be very rare. The duct was of the usual size, and showed no remains of the cystic on being cut open. In the preparation, the duct is seen, with a portion of the liver, duodenum, and pancreas, there being nothing unusual in the case, excepting the absence of the gall-bladder. From a man, twenty-six years of age, who entered the Mass. Gen. Hospital, March 20th, 1841, and died on the same day. He had been for some months in a warm climate, and had had severe chronic diarrhœa, under which he became much reduced; pneumonia, however, was the immediate cause of his death. The intestines were generally healthy.
553. Atrophy of the gall bladder, from an obliteration of the cystic duct; the hepatic duct is seen to be of full size, and a small pit shows the remains of the cystic. From a patient of Dr. Abner B. Wheeler; a very fleshy woman, about eighty years of age, who had been subject for three or four years to attacks

of bilious vomiting and diarrhœa, lasting for some days, but not confining her to the house; was quite costive during the intervals. The attacks became more frequent, and she lost much flesh, but seemed to die at last rather from a general breaking up of the system than from the disease. According to Cruveilhier, (*Anat. Path. Liv. xxix.*) the circulation of the bile and the digestion go on perfectly well in these cases.

554. Gall-bladder much enlarged, and containing a few calculi; inflated and dried.
555. Gall-bladder ossified; contained numerous calculi, about the size of a pea. *Dr. Robert Thaxter, of Dorchester.*
556. Dilatation of the bile-ducts. From a patient of Dr. John Jeffries; an old lady, eighty years of age, who had been subject to biliary attacks for sixteen years before her death. These attacks came on with vomiting, which was followed by pain in the right hypochondrium, which extended to the back, with extreme tenderness over the region of the gall-bladder; occasionally she had large, black discharges of viscid bile, which gradually became thinner as she got relief. During one of these attacks, three weeks before her death, the liver was found to be enormously enlarged, but returned to its usual size as the attack passed off. On dissection, a calculus, of the size of a pigeon's egg, was found in the duct just above the opening into the intestine, and, upon the inner surface of the duct was an old, greyish ulcer, corresponding in situation to the calculus. The duct measured, at this part, two inches and three-fourths transversely, when cut open, and throughout the liver the dilatation was in proportion. In the gall-bladder were numerous calculi, and upon its inner surface was an old ulcer, similar to that in the duct, and which had penetrated through to the liver. The ducts are preserved, with the gall-bladder, and a portion of the intestine; the calculus was very little more than a mere shell, and was soon broken. 1842.
557. Dilatation of the bile ducts. In the preparation, the hepatic duct, with its branches throughout the liver, and also the gall-bladder, were injected with wax, &c., colored yellow; the liver

having then been dissected away, and with it the smaller injected ducts, the hepatic duct, with the larger branches, and the gall-bladder, were dried, and mounted upon a pedestal. The circumference of the hepatic duct is now four and a half inches, and its branches are of proportionate size, the dilatation being regular; cystic duct two and a half inches; the gall-bladder, which was not quite filled, is five inches in length, and nearly ten inches in circumference at the largest part.

In the recent dissection, the source of disease appeared to be in the pancreas, a mass of dark, grumous, coagulated blood, about the size of an English walnut, being found in the substance of this organ, about an inch from its right extremity; the cavity, in which this was contained, was rough upon the inner surface, but sufficiently well defined, and without any distinct appearance of malignant disease. At this part the hepatic duct appeared, just at its termination, to be lost in the pancreas; the ductus communis, which was almost imbedded in the organ, communicated directly with the cavity in the pancreas, and was filled with grumous blood, which could easily be pressed through into the intestine, the duct being about one inch and a half in length, and from ten to twelve lines across when cut open.

The pancreas was of about the usual size, except perhaps for some enlargement towards the right extremity, but the duct was much dilated, the opening into the intestine being obliterated. Between the seat of disease and the left extremity the duct measured, when cut open, from one to one and a half inches across, the inner surface being very irregular, as it usually is when dilated; about the head of the organ the dilatation was less, but still enough to be seen externally, and to give the appearance, when the parts were in situ, of an encysted disease. The fluid, with which it was distended, was perhaps rather thinner than the common pancreatic secretion, but quite colorless, except for a little blood near the seat of disease, and which probably got in in the course of the dissection. A fluid, having precisely the same appearance, filled the hepatic ducts and the gall-bladder, so as to run freely when a small portion of the liver was accidentally cut off, no trace of bile being found in them. The gall-bladder alone contained, as a sediment, a small quantity of grumous blood, which had probably

got in from the cavity in the pancreas at some former time, the fluid being otherwise quite as clear as it was in the ducts. To explain the above appearances, there was found an opening, sufficient to admit a large probe, between the pancreatic and hepatic ducts, and at the point where the hepatic was lost in the substance of the pancreas.

The liver was of moderate size, quite dark, and flaccid. The stomach and intestines were opened throughout, but nothing unusual was observed, except an entire absence of bile, and in the upper part of the small intestine a considerable quantity of grumous blood.

The patient was a music-master, about sixty-five years of age, and very intemperate. Nothing is known of his history, previous to August, 1843, when he was turned off from his boarding-house, because he was disagreeable from his extreme yellowness. From that time until his death, in the following January, the jaundice was complete; appetite inordinately strong; pain in the epigastrium, with some nausea, and towards the last, hiccough; discharges from the bowels very offensive, and sometimes there was diarrhœa. He became much emaciated, but kept about until a short time before his death, not being confined to the bed, and scarcely even to the house.

558. Gall-bladder, not enlarged, but perfectly filled with calculi, as in a specimen figured by Dr. Baillie.

*Dr. Charles G. Putnam.*

559. A second specimen, similar to the last. *Dr. John Dixwell.*

560. A portion of the gall bladder, showing a firm adhesion of several calculi to its inner surface; a dry preparation, the adhesion, in the recent state, being quite firm.

561. A dried specimen, showing dilatation of the hepatic and common ducts. This last is obstructed near its opening into the intestine by a calculus about as large as the end of the little finger, and this was the cause of death. In the hepatic duct, near the cystic, is a smaller calculus, which is not fixed. The gall-bladder was much diseased on the inner surface, and con-

tracted about several white calculi, which contrast strongly with those in the duct, the cystic duct being probably obliterated. From a patient of Dr. Samuel Parkman; a female, thirty-nine years of age; was taken with violent pain in the right hypochondrium, and on the fourth day of the attack, when first seen by Dr. P., the pain continued with great violence, and was accompanied with prostration, the pulse being feeble, and the extremities cold; bowels constipated. The pain was relieved by laudanum, but on the following morning it returned, and was again relieved. On the sixth day it was found that she had died in one of the paroxysms, having become very much jaundiced the day before. Patient had been subject to similar attacks in former years. 1840.

562. A calculus, of a regular ovoid form, and about the size of the last joint of the thumb; taken from one of the ducts. 1845.

*Dr. Winslow Lewis.*

563. A calculus, three or four lines in diameter. "Taken with four others from an abscess in the liver." The patient was a female, thirty-eight years of age. 1839.

*Dr. Miller, of Pawtucket.*

564. Several hundred, small white calculi, found interspersed throughout an immense mass of encephaloid disease, which had formed in or upon the right lobe of the liver. The disease was thought to have originated in the gall-bladder; a small portion only of this organ remained, in the parietes of which was a decidedly malignant deposit, and into the cavity of which there protruded a fungous mass; the cavity, also, such as it was, contained several calculi. By washing and breaking up the diseased mass, six hundred and thirty-eight calculi were removed, and two or three hundred more could undoubtedly have been obtained, if time and patience had allowed. The liver itself was healthy, except for a malignant deposit in the left lobe. From a patient of Dr. John Flint; a very large, fleshy woman, fifty-four years of age, who had been subject to attacks of pain in the right hypochondrium, with vomiting of bile and yellowness of the skin, lasting generally eight or ten days; for the last four months a very large tumor had been felt below the right hypochondrium. 1835.

565. A calculus discharged per anum. It is of a very regular and somewhat oval form, and measures three inches and three-fourths in its greatest circumference, and three inches in its least. The interior, which is perfectly white, seems to consist of pure cholesterine, and this is surrounded by a brown crust about two lines in thickness, the calculus having been sawed open. The patient, a female, seventy-five years of age, had had repeated attacks of vomiting, with constipation, and pain in the epigastrium. After an unusually severe attack in September she passed the calculus, and from that time remained tolerably comfortable until the middle of November, when there came on the symptoms of organic disease, and she died on the 13th of December. On dissection, a scirrhus mass was found in the region of the gall-bladder, involving the pylorus, duodenum, and a portion of the colon, into which last the calculus had passed, and through a direct communication, a small, puckered cavity, about the size of an olive, being all that remained of the gall-bladder. The case was published in the *New-England Journ. of Med. and Surg.* for ~~January, 1826~~, and in the No. for January, 1825, there is reported another case, which also occurred in this neighborhood, and in which a calculus, nearly two inches in length, passed directly from the gall-bladder into the duodenum.

*Dr. Abel L. Peirson, of Salem.*

566. A calculus discharged from the umbilicus; equal to about an inch in diameter, and much worn at one extremity. This was received from the patient herself, a female, fifty-five years of age, with the following history:—For six or seven years there had been symptoms of the disease; she then became more sick, and having been confined to her room for thirteen months, an opening took place at the umbilicus in February, 1836, and had continued from that time, discharging for the first six months a watery fluid, afterwards pus in large quantities, with an occasional mixture of bile, and latterly, a mucous fluid. The calculus was discharged in April, 1837, having been felt for some weeks previously. About three weeks afterwards a second began to be felt, and in June she entered the Mass. Gen. Hospital to have it removed. Patient has never had jaundice, and thinks her general health much improved since the opening took place. June, 1837. *Dr. J. B. S. Jackson.*

567. A collection of 987 calculi, about enough having been lost to make up the thousand; vary, in size, from one to four lines, and have marked facettes. From a man, thirty-eight years of age, who had been insane for two years, but had no disease of the liver, and no indication during life of a disorder of that organ, so far as was known. August 28th, 1845.

*Dr. J. B. S. Jackson.*

568. A very regular, smooth, dark brown, ovoid calculus, nearly the size of a pullet's egg. From a woman, fifty-eight years of age, who died of disease of the chest. January 13th, 1845.

*Dr. J. B. S. Jackson.*

569. A calculus, about the size of a small nutmeg, and resembling one in structure, having been sawed open.

570. A single calculus, of a regular, oval form, and about the size of a small nutmeg. It has the consistence of cholesterine, but differs from it in being translucent rather than opaque; not sawed open, but appears on the surface light colored, rough, glistening, crystalized, and resembling somewhat the mineral phrenite. From a female, twenty-four years of age, who died of phthisis at the Mass. Gen. Hospital. June 24th, 1838.

571. The fragments of a large hollow calculus, which was found in a case of dilatation of the bile ducts (No. 556); the outer shell is quite compact, but not more, generally, than half a line in thickness. 1842.

*Dr. John Jeffries.*

572. Forty-seven different collections of biliary calculi, showing the difference, in regard to numbers, and in their physical appearance, externally and internally, as observed in different subjects. The history of many of the cases is recorded in the Manuscript Catalogue of the Cabinet.

#### IV. PANCREAS.

573. Scirrhus of the pancreas. The diseased mass is in the right extremity of the organ, two inches in diameter, or more, quite defined, and extremely dense. When recent, the cut surface

appeared white, smooth, shining, and nearly uniform, showing no traces of the glandular structure. The duct, however, passed directly through it, and, being somewhat contracted at this part, it is marked in the preparation by a thread. Otherwise, the organ is healthy, and the duct enlarged. The liver contained numerous scirrhus masses, with similar disease in the adjacent lymphatic glands and also in the lungs. From a patient of Dr. D. H. Storer; a man fifty-two years of age, a painter by trade, had always an unhealthy look, but considered himself as well until about six months before death, when he began to lose his appetite, and complain of pain in the epigastrium and left hypochondrium. Continued to work for two or three months; then gave up, and was afterwards for most of the time confined to his bed. Dr. S. then first discovered an induration in the epigastrium, with tenderness on pressure. Became greatly emaciated, but throughout his disease there was neither nausea nor vomiting, precluding the idea of a scirrhus affection of the stomach, which would otherwise have been suspected; bowels rather confined. 1838.

574. Encephaloid disease of the left extremity of the pancreas; the organ is cut open, and is seen to be otherwise healthy. From a patient of Dr. H. B. Inches; an unmarried woman, fifty-five years of age, who had suffered for many years from emphysema of the lungs, and bronchitis, but was otherwise in good health. In the spring of 1842, she began to fail, and died, gradually exhausted, on the 25th of September. Disease of the liver was recognized, and, on dissection, this organ was found studded with encephaloid masses. A similar deposit was also found in the bronchial and mesenteric glands, and in some fibrous tumors which happened to exist in the uterus. There had been much thirst, with total anorexia, but no symptom which referred particularly to the pancreas.

575. Several pancreatic calculi; they are situated near the right extremity of the organ, and two of them are about the size of a pea. They are shown in situ in the gland, the duct of which is enlarged throughout, so as to measure at one part one inch across, when cut open. From a man, thirty-five years of age; his habits were very intemperate, and he died, at the Alms-

house, from the rupture of a blood-vessel in the parietes of the stomach, the mucous membrane appearing quite healthy in the immediate neighborhood; had had vomiting and purging of blood for about a week; as such a rupture must be quite rare, it may be mentioned that a similar case occurred here a few years since.

X 576. Extensive disease of the pancreas, the case being interesting from the circumstance of there having been for a time fatty discharges from the bowels. The patient was a laboring man, forty years of age. Thirteen years before death he was greatly reduced by hæmorrhage from the bowels, and to this he always referred as the origin of his disease; three years before death he had a second attack, which was quite severe, and lasted for several weeks. There was great tenderness in the epigastrium, with frequent returns of diarrhœa and discharges of blood, the functions of the stomach, meanwhile, being sufficiently well performed.

In December, 1836, after working all the day in a damp cellar, he was attacked with febrile symptoms, pain, and obstinate constipation, which last, after a few days, was followed by severe diarrhœa; the discharges contained no bile, but consisted in a great measure of blood, and the tenderness in the epigastrium was extreme. In about a fortnight a fatty substance was first noticed, and from this time it was observed, more or less, in every discharge from the bowels until the month of May, when it entirely ceased. During this attack the patient was attended by Dr. A. A. Gould, who made a full report of the case, at the time, to the Society, and from which the following is an extract:—"There were about ten dejections daily, and they contained a transparent, oily substance, which, in about five minutes, formed a hard coating upon the surface. When examining the night vessel in the morning, after five or six dejections, there would be found a coating, an inch in thickness, of the consistence and appearance of beef tallow. Patient declares that for six weeks he must have discharged, on an average, half a pound of this substance daily; is also positive that he had no discharges of fat except after eating meat or food cooked in fatty matters, that they would cease in twenty-four hours after abstaining from meat, and

return again after resuming it; his wife, however, is confident that there was no such connection. Nothing of the kind was ever observed in the urine."

After the febrile symptoms disappeared he was able again to go to work. The pain and tenderness, however, continued, and he had frequent paroxysms of severe distress, which could only be relieved by large doses of laudanum, these attacks coming on every eight or ten days, but becoming more frequent as the disease advanced. For the first five months the appetite was good and often craving, but afterwards became indifferent. The discharges from the stomach and bowels, however produced, were uniformly and entirely deficient in bile after the attack in December, and for the last five weeks there was complete jaundice. About the last of August, Dr. Woodbridge Strong took charge of the case, and found the symptoms above described; the abdomen was extremely tender, and there was found a tumor in the epigastric and right hypochondriac regions, which extended nearly to the umbilicus; there were also the signs of advanced phthisis. The patient sat up every day until a short time before his death, and, when in bed, laid always upon the right side, with the body bent forward. On the 16th of September he was found partially comatose, and on the following day he died.

On opening the cavity of the abdomen, a large fluctuating tumor, of a regular oval form, was at once seen below the right lobe of the liver, with which it was closely connected by old adhesions: it was situated between the intestine and the posterior parietes of the abdomen, and extended towards the left side somewhat beyond the spine; the duodenum ran over, and almost around it. On making a free incision into the tumor, it was found to contain, by estimate, from ten to fourteen ounces of a bloody-looking, serous fluid, without coagula, not viscid nor greenish, and without any appearance of fatty matter. The tumor or cyst, after removal from the body, measured four inches by three in extent, its walls being from one to three lines in thickness, of a reddish color, membranous, and fleshy to the feel. Nothing could be discovered like the structure of the pancreas; yet the parietes of the cyst were evidently formed by a dilatation of that organ, as they contained several very minute calculi. The inner surface was for

the most part firm and smooth, but on the side towards the duodenum, it was, to a small extent, irregular, soft, and apparently disorganized: two calculi adhered to it near the opening of the duct, which was entirely obliterated: they were three or four lines in diameter, rough on the surface, had the usual characters of pancreatic concretions, and, one of them, on being analyzed by Dr. Charles T. Jackson, was found to consist of the carbonate of lime; there was a third, also, but much smaller. The remainder of the pancreas, forming the left extremity of the organ, was about two inches in length, much contracted, and feeling very hard, as if filled with small calculi; the duct itself was considerably enlarged, and opened freely into the cavity of the sac. There was no appearance of malignant disease about the tumor, nor, indeed, in any part of the body. The stomach was small, and pushed high up in the abdomen; contained some thin liquid of a light but decidedly yellowish color; about seven feet of the ileum were opened, but there was no trace of bile. The liver was small, dark-colored, and thrust high up by the tumor. The gall-bladder was large and distended with moderately thick bile, of a dark green color. The ducts were dilated and full of bile, but without any particular obstruction. The common duct was traced freely into the duodenum: on slitting it open, a portion of it, which formed a part of the parietes of the cyst, was found in a very sloughy condition, and similar to the appearance already described upon the inner surface of the sac, with which it corresponded, it being evident that an opening was about to be formed, if it did not already exist, between the sac and the hepatic duct.

This case has already been published by Dr. Gross, in his work on Pathological Anatomy.

#### V. SPLEEN.

577. A portion of the spleen, from which the blood has been washed, to show the parenchyma.

578. Cast in plaster of a fractured spleen. From a Hospital patient; a man thirty-two years of age, fell twenty feet, and struck upon his left side. Seen a quarter of an hour after-

*Referred to  
in 2d ed. Surg. anal.  
See note p. 177.*

wards, and was then in a perfect state of collapse; great pain in abdomen, particularly in the left lumbar region, which was extremely tender, though without any external injury. Soon after getting into bed, he passed about  $\frac{3}{4}$  x. of nearly clear blood from the bladder. Pain continued, with great restlessness and ineffectual attempts to vomit, and he died in an hour and a half after the accident. On dissection, there was found in the peritoneal cavity  $\frac{3}{4}$  xl. or more of dark fluid blood, with an extensive and comminuted fracture of the spleen and left kidney, and a slight fracture of the left lobe of the liver; several ounces of blood about kidney, with ecchymosis on left of spine as far down as the pelvis. No other internal injury, but externally there was found dislocation with fracture of the left humerus. February 2d, 1838. *Dr. Henry J. Bigelow.*

579. Ossific plate, about an inch in diameter, from the surface of the spleen; a dried specimen. The organ was much enlarged, and weighed a pound, when recent. From a man, fifty-eight years of age, who died from a great variety of internal disease.

580. A second specimen, similar to the last, but rather larger. 1844.

581. Spleen very much enlarged, and about three-fourths of its substance filled with softening, tuberculous matter. Extensive disease was found in the lungs, bronchial and lymphatic glands, and in the intestines; also a few tubercles in the liver, kidneys, bladder, uterus, and heart. From a patient of Dr. Martin Gay; eight and a half months old, and belonging to a highly tuberculous family, but was healthy until three months before death, when it had hooping-cough, and from that time a general decline. The spleen was felt very distinctly, as a large and movable tumor, for two weeks before death, extending nearly to the crest of the ilium.

A similar enlargement has been felt during life in some other cases of general tuberculous disease, in young subjects, which have occurred here, and, in one of them, where there was an absence of any very marked local symptoms, this sign led to a correct knowledge of the nature of the case.

582. Extensive, tuberculous disease of the spleen, but very much less than in the last case; the lungs, bronchial glands, and liver were also diseased. From a patient of Dr. Charles E. Ware; an infant, twenty-five months old, who began to fail from the age of six months, when it was weaned. 1838.

583. A peculiar disease of the spleen, found in connection with disease of the heart, and owing perhaps to a former inflammation of the cells of the organ.

As I believe this to be rather an unusual affection, I would give here the result of observations upon eleven cases in which I have happened to meet with it. The disease consisted of one or more perfectly defined, opaque, yellowish, firm masses in the substance of the organ, extending to the surface, but never projecting above it. The form of the masses was irregular, and they varied in size generally from three lines to an inch or more; often surrounded by a little loose cellular tissue, but never encysted. Except in one case, where there was a cadaveric red stain, the color of the mass was whitish in two, and more or less yellow in all of the rest, sometimes faint, but often bright, so as to contrast strongly with the rest of the organ; in some of the less perfect cases, however, there was an intermixture of red. This yellow color, except for its intensity in some of the cases, might be expected, supposing the disease to be the result of former inflammation of the cells of the organ; a similar discoloration of the fibrinous clot being not unfrequently observed in old cases of phlebitis. The structure was very nearly uniform, and the cut surface smooth; but with a distinct appearance, as of blood-vessels, in some of the masses. The corresponding surface of the organ, externally, was opaque, the color showing through more or less from beneath, although in one case the existence of the disease was only indicated externally by a deep red color; the whole surface was sometimes depressed, and sometimes not at all so, but more frequently there was a narrow depression about the limits of the disease; old peritoneal adhesions were also sometimes found. The spleen itself was generally noted as of the usual size; in one case it was small, in two it was large, in one it was three or four times its usual size, and in one it was found to weigh twenty-three ounces (avoir.); in the last case the

patient had had intermittent fever four years before death. There was never any appearance of tuberculous disease, nor of softening of the masses, and in one case only, was there anything like acute inflammation, the substance of the organ in three places being firm, quite friable, and comparatively of a dark red color; in five cases it is expressly stated that there were no tubercles in the lungs, an important point in regard to the nature of the disease of the spleen. In one case a very marked, dark red, ecchymosed appearance surrounded the diseased mass to the extent of two or three lines, and this was the only indication of an apoplectic condition that was ever observed.

All of the patients, excepting one, were adults. Most of them died of complicated organic disease, three of organic disease of the brain, one of phthisis, and one, a lad ten years of age, of cerebral disease after scarlatina. With one exception only, there was in every case well-marked organic disease of the heart, and in six there were vegetations upon the valves; in one case, there was a fibrinous mass, infiltrated with puriform fluid, and as large as the top of the thumb, in the appendix of the right auricle; in one of the six cases, just referred to, besides the vegetations upon the valves, there was fibrine adhering to the inner surface of the left auricle, and apparently becoming organized, and in another there was inflammation of the iliac and femoral arteries, these vessels being filled with lymph. (No. 361.) There being, then, this tendency in the vascular system, it is not very surprising, considering its structure, that the spleen should be similarly affected.

Cases of this disease have been observed by Dr. Hodgkin, Prof. Rokitanski, and M. Cruveilhier. Prof. R. is inclined to connect the change in the spleen with some peculiar state of the blood, and the result of the cases above analyzed is interesting in connection with this view of the subject; Prof. R. has further observed a chronic affection of the kidneys, as a frequent occurrence in his cases, and on a review of those which have been above reported, it appears that in three of them a similar change was found. The above analysis having been sent to Dr. Thomas Hodgkin, was communicated by him to the Medico-Chirurgical Society, and published, with some remarks by Dr. H., in the Transactions of the Society. (Vol. xxix. p. 277.)

In the specimen which has been preserved to represent this disease, the whole mass, when recent, was of a golden yellow color, though it has now become quite pale. 1839.

584. Atrophied spleen; it is very diminutive in size, has a wilted appearance, and adhered intimately to the neighboring organs. From an old woman, who died of bronchitis; a patient of Dr. John Homans. 1844.

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## IX. URINARY ORGANS.

### I. KIDNEYS.

585. A horse-shoe kidney; from an adult subject. The fusion seems to be perfect, and, as usual, by the lower extremity of the organs. *Dr. Robert Thaxter*, of Dorchester.
586. Acute inflammation of the kidney, from a case of fracture of the spine (No. 139); the bladder, which was gangrenous, has also been preserved, and the symptoms will be given in connection with that specimen. The disease affected about one-half of the cortical substance, the inflamed portions being well-defined, and characterized by an increased vascularity, and by the effusion of lymph and pus, the substance of the organ being otherwise healthy. The inner surface of the pelvis was of a dark red color, and distended with a thin, dirty fluid, as was also the ureter, this last being much enlarged, and the cellular membrane about it indurated. The other kidney was still more diseased.
587. Three large cysts in the kidney, the organ being otherwise apparently healthy.
588. Encysted disease of the kidney, the whole organ being affected and considerably enlarged, as in a specimen which has been figured by Cruveilhier. (Livrais. vi. pl. 4.) From a patient of Dr. Charles G. Putnam; a lady about sixty years of age; had

had strangury, with pain in the loins, for some years before death; for the last few months the urine was sometimes retained, and sometimes scanty and bloody, the pain being much aggravated.

589. Encysted disease of the kidney. Both of the organs were similarly affected, and so completely disorganized that no trace of the cortical nor tubular portions could be found, the structure being nearly uniform. The cysts were generally about one or two lines in diameter, but varied much in size, and some would have held from one to four ounces; fluid generally clear, but in some of the larger cysts it was rather dark and turbid. The organs contained so little blood as to appear nearly colorless, and being very much enlarged, they formed upon each side of the spine a prominent object when the abdomen was first opened, resembling somewhat, from their want of color, translucency, and coarsely granulated surface, two large masses of boiled sago. The pelvis and infundibula were rather small, and did not communicate with any of the cysts. One of the organs has been preserved, and cut open so as to show its internal structure. In the liver, also, were found a number of cysts, varying from one to twelve lines in diameter; their contents, also, varied much, some being filled with clear serum, and others with a viscid, milky, or purulent fluid, the inner surface being smooth and polished, and the organ being otherwise healthy.

From a patient of Dr. John Ware; a young man, nineteen years of age, and who had always been subject to excessive thirst and to a copious discharge of urine. From infancy he was accustomed to drink great quantities of water, and suffered so much when deprived of it that he would sometimes drink the dirty water from a wash-basin. During the last five years he had several attacks, which may have been owing to the disease of the liver. About a month before his death the respiration was observed to be hurried and panting, continuing the same when at rest or asleep, but this symptom he did not notice himself. Two weeks afterwards, when Dr. W. was first called to see him, the dyspnoea was the prominent symptom; he was then listless and pale, and his countenance had at times a deathly aspect; complained of pains in the limbs, which he called

cramps; had some palpitation and cough, and the sound of respiration was very loud; stomach and bowels sufficiently well; no affection of the head. The urine was copious, clear, frothy, of a light straw color, coagulating moderately when heated, and becoming milky on the addition of nitric acid. From this time there was no material change in the symptoms; the flesh, strength, and appetite gradually failed, and the breathing became more rapid and laborious, so as to become painful to witness, though the patient himself did not complain of it, but rather of the pain in his knees, which was sometimes very severe. The urine increased in quantity, but the thirst was not very great. Came down stairs until a week before death. For the last two days there was partial stupor, with some delirium, though he was rational at intervals, the quantity of urine diminishing on the last day. The peculiar respiration in this case was supposed by Dr. W. to be owing to a deterioration of the blood produced by the disturbed function of the kidneys.

590. Section of a kidney, which was much enlarged and almost perfectly bloodless, with opaque, yellowish points in the cortical substance, as from an albuminous deposit. The organ weighed, when recent, twelve ounces, and measured six inches in length. From a patient of Dr. J. G. Stevenson; a tall, stout man, who, after having recovered from a febrile attack, became affected with œdema of the lower extremities and of the face, with ascites; was relieved for a time, but soon became worse again, and died in about six months from the first of his sickness. (See next specimen.)
591. Atrophy of the kidney. Very little of the original texture remains, the weight of the organ, when recent, being one ounce, and the length one inch. From the same subject as the last specimen. In a very strongly marked case of Bright's disease of the kidney, which occurred at the Mass. Gen. Hospital about this time, the atrophy of one of the organs was still more remarkable.
592. Very extensive tuberculous disease of the kidney, three or four large cavities communicating with the pelvis, and in some

places almost the entire substance of the organ being destroyed. The cavities were coated thickly upon the inner surface with a curdy, tuberculous-looking deposit, and the same extended down the ureter; in the bladder also there was extensive ulceration, with a few tubercles, as seen in the preparation, the appearance of the kidney corresponding perfectly with the figures given by Dr. Baillie and by Dr. Carswell of this form of disease. Besides this affection of the kidney, there was also extensive tuberculous disease of the lungs, with ulceration of Peyer's glands. The patient, a middle-aged woman, complained of pains in the pelvis, with dysuria for three years before death; from these symptoms she was for a time relieved, but they soon returned, with leucorrhœa, and continued until six months before her death, when disease of the lungs appeared, and from that time all trouble about the pelvis ceased.

Several cases of this kind have been observed here, the disease of the kidneys being very extensive, and of long duration, as shown by the symptoms, whilst the affection of the lungs, though sometimes quite extensive, was evidently more recent.

593. Carcinoma of the kidney. The patient, a man, forty-nine years of age, had generally enjoyed good health, but for the last fourteen years had been subject to epilepsy. Six or eight weeks before death he had a fit of unusual severity, which was followed by marked cerebral symptoms, and he died comatose and paralytic, disease of the kidneys never having been suspected. In the brain and lungs were some diseased masses, probably carcinomatous. The liver and right kidney were healthy. The left kidney weighed eighteen ounces, and was nearly seven inches in length. The inferior portion was completely disorganized, and consisted of a coarse areolar tissue, a semi-translucent deposit, and some opaque, tuberculous-looking matter, such as is often found in carcinomatous masses, the whole being quite firm. The upper portion contained some well marked encephaloid deposit, with effused blood, besides one or two large cysts. One half of the organ has been preserved. 1838.

594. Carcinoma of the kidney. Both of the organs were enlarged,

firm, and lobulated on the surface, but retained their polish, when the external tunic was stripped off. On making a single longitudinal section through each of them, not a trace of cortical substance was to be seen, but in its place an opaque, white, smooth, homogeneous structure, with slight traces of effused blood upon the external surface; a few only of the tubular portions remained healthy. The same disease was found very extensively throughout the abdomen. (See specimen 507.) From a patient of Dr. Charles G. Putnam; a little girl, six years of age, who had been sick for about a year, but had never any symptoms which were referred to the kidneys. 1840.

## II. RENAL CAPSULES.

595. Ossification of the renal capsules, the result, probably, of tuberculous disease of these organs, specimens of which have been exhibited to the Society. The lungs and bronchial glands were perfectly healthy. A dry specimen. From a young woman, who died of typhoid fever. 1840.

*Dr. J. B. S. Jackson.*

596. A large, encysted tumor in the situation of the left renal capsule. The patient was forty years of age, and died of erysipelas, at the Mass. Gen. Hospital, after the removal of a cancer of the breast, having had the disease for two years and a half. About ten months before death she first perceived a tumor below the left hypochondrium; this increased somewhat, and, on examination, was found to be of considerable size, but was not tender, and neither was, nor ever had been painful. The tumor adhered closely to the left kidney, this last being rather small, but quite healthy in structure; together, they weighed two pounds and eleven ounces. The cyst was of a regular, rounded form, and as large as the two fists, consisting of a dense, white, fibro-cellular structure, from one or two to eight lines in thickness. The cavity was mostly filled with a soft, curdy substance, of a dirty, greyish or brownish color; it contained, also,  $\frac{3}{4}$  x. of a watery fluid, which escaped when the sac was first opened. The inner surface was regular, being in some parts smooth and polished, in others yellow and almost coriaceous, like the gizzard of a bird, with here and there

patches of a white, chalky-looking deposit. The left extremity of the pancreas, and a portion of the colon, adhered firmly to the tumor. No appearance of malignant disease in any of the organs. The kidney is preserved in connection with the cyst. May 26th, 1843.

### III. PELVIS AND URETER.

597. A mould in wax, showing a great dilatation of the pelvis of the kidney, the ureter at its commencement being of the natural size and pervious. The kidney was in some parts extremely thin, and bulged out externally, as usual in these cases; a small calculus was felt in the pelvis before it was injected. The other kidney was affected with Bright's disease. From a man, sixty-three years of age, who died of pneumonia at the Mass. Gen. Hospital. January 31st, 1846.

598. The pelvis of the kidney of a Mink, (*Putorius vison*) distended by strongyli; the parasites have been preserved, and will be noticed in their proper place. The organ itself is somewhat enlarged, and reduced to a mere cyst. Upon its inner surface is a slender piece of bone, two-thirds of an inch in length, with long, narrow, curved, and parallel slips, going off from each side, like ribs from the spine. Ureter pervious. The whole urinary and genital apparatus, having been dissected out by Dr. Erasmus D. Miller, of Dorchester, has been preserved, and seems to be otherwise healthy. 1834.

Since the above specimen was sent, Dr. M. has met with five or six other cases, all of which perfectly resembled the one just described, except that the bone was not again found. In a specimen, however, which was examined in this city, there was found in one of the kidneys a single worm, twenty-three inches in length, and upon the inside of the cyst a bone, which very nearly resembled the one in Dr. M.'s specimen. In every case the animal itself appeared to be healthy.

599. Great dilatation of the ureter and kidney, as represented by Cruveilhier, (Liv. xxvii. pl. 2.) The ureter was so large as to have been mistaken for the intestine, and, as such, was cut across near its lower termination. The kidney externally was

rather small, bulging out here and there, and feeling like a mere cyst. From a dissecting-room subject; cause of the dilatation not observed. Having been inflated and dried, a portion of the kidney has been cut away, showing the extreme thinness of the organ, and that the external protuberances correspond to the infundibula.

*Dr. O. W. Holmes.*

600. Ureter dilated to about the size of the little finger.
601. Ureter dilated to within two inches and a half of the bladder, and then abruptly contracted from the size of the thumb to about the usual size; a dry specimen. The pelvis of the kidney was dilated, and the organ atrophied. From a man, who had suffered for some time from frequent micturition, and died at the Mass. Gen. Hospital, of apoplexy. June, 1846.

*Dr. J. B. S. Jackson.*

#### IV. BLADDER.

602. Fœtal bladders, distended and dried; the age marked on each.

*Dr. J. B. S. Jackson.*

603. A peculiar form of the bladder, the base being dilated laterally, and the fundus rather contracted. From a man who died at the Mass. Gen. Hospital, of phthisis. June, 1846.

*Dr. J. B. S. Jackson.*

604. Extensive inflammation and gangrene of the bladder, from a case of fracture of the spine, (No. 139.) There was paralysis of the organ, and after the first few days pain with tenderness in the hypogastrium, and a discharge of blood, mucus, and pus with the urine, which was very fœtid. Externally, the bladder appeared somewhat enlarged, and was very thick and firm to the feel. Cavity filled with coagulated blood and pus, the whole being excessively fœtid. Fundus and posterior portion comparatively healthy, the muscular coat being thickened, but the inner surface nowhere red. Anteriorly, the mucous coat was extensively destroyed, the portion which remained being separated from the subjacent parts, or hanging off in gangrenous shreds; in some parts the muscular coat formed the

inner surface, but to a considerable extent this also was destroyed; thick, whitish pus was effused between all of the tissues, and between the bladder and symphysis pubis there was an abscess of some size. General appearance of the diseased surface rough and whitish. For inflammation of the kidneys in this case see specimen No. 586.

605. A preparation, to show the condition of the bladder which is sometimes observed in a case of calculus. The organ in the recent state was dark colored, small, and thickened, but towards the outlet was dilated into a large cavity, regular in its outline, quite thin, well defined, and containing the great mass of the largest of two calculi, which were contained in the bladder and will be hereafter described, a division in the calculus corresponding with the limits between the muscular and the sacculated portions of the organ. Cruveilhier figures (Liv. xxxvi.) a similarly formed renal calculus, of which the head and body are contained in different cavities, the neck, as he calls it, corresponding to the septum which divides them. Upon the inner surface of the thin portion of the bladder, posteriorly, were several distinct orifices, one of which, at least, opened freely into one of the vesiculæ seminales, and some of the others may have been the ducts of the prostate gland, though no trace of this body could be found. Upon the median line, posteriorly, of the thin portion of the bladder, and not far from the orifices just mentioned, was a very prominent, fleshy, little body, which corresponded with an equally marked depression in the calculus, and which was regarded as the verumontanum, though it was far from the proper commencement of the urethra, and had none of the orifices perceptibly opening upon it. With regard to this sacculated condition of the bladder, it may have been owing to a dilatation of the parts, and an atrophy of the prostate gland, or to the process of ulceration, the direct opening into one of the vesiculæ seminales being in favor of this last view of the case. The disease extended from the bladder up the ureters to the kidneys, the lining membrane of these organs being red and thickened, and their cavities dilated and filled with pus. From a case of old injury of the spine. (No 142.)

606. Sacculated bladder. The organ itself is not remarkable, except for a thickening of the muscular coat, but connected with it posteriorly is a cavity, which, in the recent state, must have held from one to two quarts. The two cavities having been inflated and dried, and the posterior one cut open, there is seen to be a direct communication between the two, of an oval form, and about one inch and a half in length; a similar specimen, except that the opening is much smaller, is figured by Dr. Baillie. The specimen was sent in its present condition to the Society, by Dr. Ruel Burrows, of Fryeburgh, Maine, and with it the following history of the case:—

“The man from whom this bladder was taken died about the year 1824, and at the age of sixty-one years, I think; had been very feeble for many years, and unable to labor. For two or three years previous to his death, he told me “he looked like a woman six or seven months advanced in pregnancy.” Before that period he said “he was much smaller, though he knew his water came from some place besides his bladder” (to use his own expression) for he found by altering his position after the first discharge, the water ran freely and “he often made a quart the second trial.” The rectum was nearly closed by mechanical pressur , but this did not occasion his death, his whole system being thoroughly impregnated with urine, which destroyed the functions of the stomach and bowels for the last year of his life, so that he said “he could taste nothing but his urine let him eat what he pleased.”

607. Fungous excrescences from the inside of the bladder, being probably the form of disease which has been compared by Wilson to the appearance of the placental vessels unravelled. The largest, situated just above the opening of the right ureter, was two inches in diameter, and had a pedicle of one-third of an inch or more; nearly one-half of the mass was of so delicate a structure that it could only be examined under water, consisting of loose, floating fibres, about one-third of a line in width, flattened, bearded on the edges like the feathers of a quill, and of a bright red or scarlet color, which last they have of course lost since the specimen has been in spirit. The central portion had a white, opaque, and cerebriform appearance, and in the pedicle were enlarged blood-vessels. Two

other excrescences were situated just at the neck of the bladder; one, about as large as the top of the finger, resembled the first in structure; the other, which was considerably smaller, and was supposed to be a more recent formation, consisted entirely of the flocculi, without any of the white central structure. The bladder is seen to be enlarged, and the muscular coat thickened, the inner surface being covered, when recent, with a reddish, creamy fluid. The patient was a laboring man, forty years of age; had been troubled with dysuria for some years, and for the last year had occasionally discharged coagulated blood; had also pain along the urethra. Entered the House of Industry with cholera, and died in twenty-four hours, passing his urine frequently during that time, but without pain. 1836.

608. Malignant disease of the bladder. From a patient of Dr. George Hayward; a gentleman, forty-three years of age, who died of very extensive encephaloid disease within the abdomen. Just at the opening of the urethra are two rounded, pedunculated masses of the same substance, projecting into the cavity of the bladder, one above and the other below the opening; they are about the size of English walnuts, and are partially encrusted with a deposit from the urine. Organ otherwise healthy. 1837.

v. FOREIGN SUBSTANCES, CALCULI, &c.

609. Two pieces of carious bone, passed from the urethra; each of them measures about two and a half by one and a half lines, and, being arrested at the orifice of the urethra, were removed by a slight incision. The patient, a boy, about fourteen years of age, had had for several years disease of the hip, with abscesses about the upper and under part of the thigh, which opened in different places, small pieces of bone being occasionally discharged. Was not confined to the house, and never had any signs of infiltration of urine. The fragments of bone were passed between one and two years since, and the patient's health is now much improved. January, 1843.

*Dr. Henry I. Bowditch.*

610. A pen-holder, four inches and a half in length, which was passed into the bladder by a boy fourteen years of age, and was removed, after much difficulty, by means of the urethral forceps. The case occurred in March, 1846. Dr. W. was called upon on the third day, and found the patient in great suffering, with incontinence of urine, and occasional discharges of blood; through the rectum the foreign body could be distinctly felt, one extremity being just within the urethra, and the other apparently at the fundus of the bladder. The pen-holder is of about the usual size, made of bone, and quite smooth. 1847.

*Dr. J. Mason Warren.*

611. A portion of a catheter, which was broken off in the bladder; it is three inches and a half in length, and there is formed upon it, midway, a soft, brownish calculus, about as large as the end of the thumb. The patient was a healthy farmer, eighty-three years of age. In May, 1841, having had dysuria for some months, there came on retention of urine, for which the catheter was required; a small sized instrument was passed daily until about the first of June, when, on using considerable force, something was felt to give way, and, on withdrawing the instrument, it was found to have been broken off at the curve. A larger one was then passed without difficulty, and with it the piece of the broken catheter was distinctly felt in the bladder. For another month the urine was drawn off twice daily, after which it was expelled by the natural efforts, and the patient gradually regained his health, so as to be able to do light work on his farm, the urine, meanwhile, being passed frequently, and depositing a thick, ropy sediment. On the ninth of December he was attacked with febrile symptoms, nausea, and vomiting, pain in the bowels, with constipation, and a partial retention of urine; the fever continued, with great prostration, an involuntary discharge of urine, and pain, and he died on the seventh of January. On dissection, the bladder was found much thickened and discolored, and there was observed externally one small blue spot through which the catheter penetrated, on taking hold of the organ to feel for the instrument; there was, however, no peritonitis; prostate gland enlarged. This case occurred in the practice of another physician, but the

specimen was presented to the Society, with the above history of the case, by the late *Dr. Henry Tuck*, of Barnstable.

612. Calculus formed about the barrel of a quill. The following is an abstract of a history of the case which was sent with the specimen by the attending physician:—On the 4th of August, 1842, Dr. W. was called to a married woman, about forty years of age, and found her flooding profusely from an abortion which had just taken place, and which she had procured, as she afterwards stated, by introducing the barrel of a goose-quill, the instrument slipping from her fingers and not being again seen. The dysuria, which came on at once, soon became excessively severe, and so continued until the cause was removed; the nature of the case was obvious, but both the patient and her husband were indignant at the idea of a mistake having been made, and insisted that the quill was in the uterus. On the 20th of the following October, being felt in the bladder, an attempt was made to extract it; it was afterwards attempted to remove it by dilating the urethra, but the parts were very tender, and both of these operations failed. On the 26th of November the urine began to pass involuntarily, and on the 28th, a hard substance presenting itself at the orifice of the urethra, was seized with a pair of common dressing forceps, and the entire specimen, as now seen, was extracted, with perfect relief to all the symptoms. The quill is two inches in length. The calculus, which has formed about its small extremity, and is still firmly attached, is about as large as the last joint of the fore-finger, measuring fourteen lines in length and eight and a half in diameter; it is of a regular, ovoid form, granulated on the surface, of a brownish color, and consists, according to an analysis made by Dr. Charles T. Jackson, of the urate of ammonia and the phosphate of lime and magnesia.

*Dr. Timothy Wellington*, of West Cambridge.

613. Uric acid, deposited in the form of a fine red sand, and more or less crystalline; analyzed by Dr. Martin Gay. From a woman, forty years of age, who had had much trouble at the stomach, and particularly a sense of burning, for the last two years. Urine turbid, and somewhat diminished, depositing

sometimes a greyish, sometimes a blackish sediment, and often a red sand, as seen in the present specimen. 1847.

*Dr. Thomas Sparhawk, of Amesbury.*

614. A collection of very small calculi, which consist, according to an analysis made by Dr. Charles T. Jackson, of nearly pure uric acid. They are, on an average, about half a line in diameter, of a light brown color, rounded form, botryoidal upon the surface, and now sufficiently consistent, though, when recent, they were quite soft; in amount, there would have been altogether nearly a tea spoonfull. From the urinary bladder of an old woman, who died of extensive ovarian disease; a patient of Dr. John Homans.

When nothing is stated to the contrary, it may be understood that the calculi were removed from the urinary bladder after death.

615. A second collection, very similar to the last, except that the color is lighter; consist principally of uric acid and animal matter, according to an analysis made by Mr. Joseph Peabody, a student of chemistry in Dr. Charles T. Jackson's laboratory. From a man past the middle period of life, who had been dyspeptic and generally out of health for several years, these small calculi being often passed. 1847.

*Dr. Woodbridge Strong.*

616. A well characterized uric acid calculus, two inches in length, of a flattened oval form, reddish brown color, compact in structure, finely tuberculated upon the surface, and, on being sawed open, shown to be formed in concentric layers. Analyzed by Dr. Gay; uric acid, with a trace of some urate.

The patient was an Italian cook, sixty-two years of age; in the summer of 1839 he was in the Mass. Gen. Hospital, suffering very severely from dysuria, with great local irritation, and much constitutional affection, the symptoms having been coming on for two years; on the day after his admission a catheter was passed, but nothing was ever reported in regard to a calculus; urine sometimes high colored, depositing a sediment, and at other times quite pale. On the 7th of April, 1839, he was attacked with pneumonia, and, after he had been sick

for ten days, he first complained of difficulty in passing his urine; a catheter was then introduced, and the calculus was distinctly felt; his distress from this source lasted for a few days, then subsided, and did not again recur until three days before his death, the urine, meanwhile, being clear, and without sediment. Died on the 6th of May. The bladder was firmly contracted about the calculus, and the inner surface was covered with a thin, dirty mucus. *Dr. Charles E. Ware.*

617. Two pear-shaped calculi, more than half as large as the last joint of the finger, and remarkable for their similarity in form and external appearance. Analyzed by Mr. Peabody; chiefly uric acid, combined with the coloring matters which generally exist in the urine; also small quantities of the urates of soda, potash, and ammonia. From a negress, about sixty years of age, who died from the effects of a large fibrous tumor of the womb, and without any known symptoms of calculus. 1844.

*Dr. Horace Thurston.*

618. Calculus from the kidney of a man (Lane) who died of disease of the heart, at the Mass. Gen. Hospital, October 19th, 1836. It is of a very dark and dull brown color externally, and of an irregular form. Analyzed by Mr. Peabody; mostly uric acid and the urates, especially urate of ammonia; a projecting portion having been cut off, it is seen to be, internally, of a lighter color, and there is found a trace of the phosphate of lime.

619. A small calculus, which, from its cylindrical appearance, may perhaps have formed in the urethra; it is rather more than half an inch in length, of a reddish brown color, quite smooth and compact, and consists, according to Mr. Peabody's analysis, of uric acid and the urates, with a slight trace of potash, but no salt of lime.

620. A flattened, oval calculus, one inch and three-fourths in length; sawed open. Analyzed by Dr. Gay; consists of uric acid, with a thin coating upon the surface of oxalate of lime, this last forming in several places masses of from one and a half to four and a half lines in diameter; upon the oxalate is a

somewhat extensive, but very thin deposit, consisting of the triple phosphate with a trace of the phosphate of lime.

The subject of this case was the late Rev. Dr. Prince, of Salem. He was eighty-five years of age, and began to have stangury twelve or fourteen years before his death; this went on increasing, and the irritation was such that he was obliged constantly to wear a urinal; occasionally bloody urine, with other symptoms of stone, though none was ever detected, on careful examination; meanwhile his general health was good, and the urine was natural in appearance, except for a mucous sediment. About three years before his death he had a very severe attack, with frequent and profuse discharges of blood; lasted for several weeks, and nearly proved fatal. For seven or eight years previous to this attack, he had had so much tenderness in the region of the kidneys as to prevent his riding in a carriage without great suffering, unless he inclined so much to the left side as almost to assume the recumbent posture, when he was comparatively easy, but from that time he could ride almost any distance without the slightest inconvenience. As his strength returned, his former symptoms left him, and except for an occasional retention of urine, he had no further trouble until three weeks before his death, when the fatal attack came on, the symptoms being the same as in the previous one.

On dissection, the bladder was found somewhat contracted, but still capable of containing a considerable quantity of fluid; mucous membrane highly inflamed, and in some parts ulcerated. The calculus was situated in the fundus, and was so firmly grasped by the muscular coat of the bladder as to require considerable force to disengage it, being, in fact, so completely encysted, as to appear like a firm tumor attached to the external surface of the bladder. Prostate healthy. Left kidney completely disorganized; pelvis greatly dilated, and upon the inner surface inflamed and ulcerated, the same disease extending throughout the ureter; right kidney and its pelvis much less diseased. This case was published in the Boston Med. and Surg. Journ. (Dec. 21st, 1836,) and the specimen was sent to the Society by *Dr. George Choate*, of Salem.

621. A very irregular, compact, reddish brown calculus, about an

inch in diameter, and one fourth of an inch in thickness, and which is interesting from the appearance which it presents of having formerly been very much larger than it now is, both of the surfaces having a remarkably eroded appearance. Analysis by Dr. Gay; uric acid, with a small quantity of phosphate of lime, and a trace of some urate; upon the surface is a very thin deposit of the oxalate of lime. From a patient of Dr. John Homans; a gentleman, who died suddenly from disease of the heart, having had no urinary symptoms, so far as was known. The calculus was from the pelvis of the left kidney, and with it were found two others, of a rich brown color, and about the size of peas, one of them much eroded, but the other being entire, nearly smooth, and with some appearance of facettes. November, 1843.

622. A calculus, about the size of a hen's egg; sawed open. Analyzed by Dr. C. T. Jackson; chiefly uric acid; upon the surface a rough crust of the mixed phosphates.

*Dr. Winslow Lewis.*

623. A calculus about the size of a goose-egg, from a patient of the late Dr. John Frink, of Rutland. Analysis by Dr. Gay; in the centre uric acid, with some mixture of the phosphates; externally, the mixed phosphates, with a small quantity of uric acid, and urate of ammonia. Removed by an operation by Dr. F. several years since. 1843. *Dr. H. E. Clap*, of Wrentham.

624. A calculus, about the size of a pullet's egg, and of a rounded form, but having upon one side a marked concavity. On being sawed open, the most prominent objects are a dark central nucleus, and a purple color, which last extends to some depth below the surface. Analyzed by Mr. J. Peabody; chiefly uric acid, and the urates of potash and ammonia, with some phosphate of lime, and a very small amount of the triple phosphate; slightly fusible; in the nucleus the uric acid is in excess; the purple color is due to a mixture of uric acid with the animal matter. From a man, sixty-eight years of age, and formerly a resident in this city; had been dyspeptic for twenty years or more, and, for seven or eight years before his death, he had suffered from his urinary disease to such a degree that he was

obliged from the first to give up his work, and remove into the country. The urine was turbid, and very offensive, with a mucous sediment; catheter required sometimes as often as every half hour, the pain and distress in the bladder being greatly increased if the urine was allowed to collect. There was considerable disease of the inner surface of the bladder, and, in the situation of the "middle lobe" of the prostate, a defined tumor, which corresponded to the concavity in the calculus, the gland itself being sufficiently healthy; besides the large calculus, there were four or five others, which were about the size of apple seeds. The kidneys were also somewhat diseased. 1846. *Dr. Woodbridge Strong.*

625. The urine of a Boa, consisting of a solid, hard, white mass; according to Müller the urine of serpents contains the lithates of potash, soda, and ammonia, but not a trace of urea.

*Dr. Charles T. Jackson.*

626. An irregular calculus, from the kidney of Lieut. McC., who died of phthisis at the Mass. Gen. Hospital, September 19th, 1845. Oxalate of lime and urate of ammonia, according to Dr. M. Gay's analysis.

627. A calculus, of which about eight-tenths consists of the phosphate of lime, and one-tenth of the carbonate of lime; sawed open, and has been analyzed by Mr. J. Peabody. It is nearly as large as a hen's egg, and was removed by the operation of lithotomy. 1844. *Dr. Joshua B. Flint*, of Louisville, Ky.

628. A calculus of a regular, flattened, oval form, and about the size of a large nutmeg; sawed open, and seen to be deposited in concentric layers. Analysis by Mr. Peabody; phosphate of lime, with a large portion of animal matter, and a little uric acid and urate of ammonia, but no magnesia. The surface is covered with minute, sparkling crystals. Removed by the operation of lithotomy. 1844.

*Dr. Joshua B. Flint*, of Louisville, Kentucky.

629. A calculus, of an elongated form, one inch and three-fourths in length, and about the size of the fore-finger. The surface is

rough, and, having been sawed open, it is seen to consist of two portions, an oval calculus, which is formed of concentric layers, and a coarse amorphous mass, which is deposited upon one extremity of this as a nucleus. Not far from the centre of the nucleus is a fine, deep green line, concentric with the other deposits. Analysis by Mr. Peabody; phosphate of lime; in the nucleus a portion of the urate of lime, urate of ammonia, and free uric acid, the green line being probably a colored animal matter. Removed, by the operation of lithotomy. 1844.

*Dr. Joshua B. Flint*, of Louisville, Kentucky.

630. A calculus, which was removed from near the upper extremity of a dilated ureter, (No. 601) and seemed to be adherent to its inner surface, as were the biliary calculi in a case above described, to the inner surface of the gall-bladder. It is about two lines in diameter, and is made up of a group of pale yellowish, well marked, lenticular crystals, much resembling some of the crystals of carbonate of lime; consists of the phosphate of lime, according to an analysis by Dr. C. T. Jackson. From a man who died of apoplexy, at the Mass. Gen. Hospital, June 19th, 1846.

*Dr. J. B. S. Jackson.*

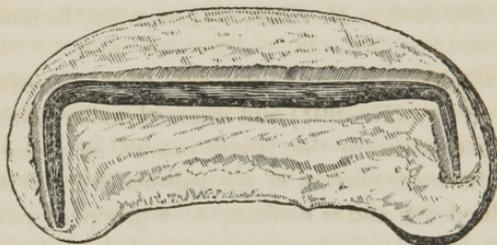
631. A calculus about the size of a pea, quite rough, and crystalline upon the surface. From a boy, seven years old, a patient of Dr. M. S. Perry; Dr. P. was called on account of an obstruction to the flow of the urine, and found the calculus one inch and a half from the orifice of the urethra; Dr. George Hayward was then sent for, and the calculus was removed without much difficulty, and by simply dilating the passage. 1841.

632. A calculus passed from the urethra. It is of a flattened oval form, half an inch in length, and irregularly crystallized upon the surface. Analysis by Dr. Charles T. Jackson; phosphate of lime, with a trace of magnesia. The brown crust, which partially covers the external surface, was found to be a very rare substance; it was insoluble in muriatic acid; being dissolved in nitric acid, diluted, filtered, and evaporated to dryness, it gave no evidence of purpate of ammonia; a yellow solution is formed by the nitric acid, and, on adding ammonia,

a lemon colored flocculent precipitate is thrown down, characteristic of xanthic oxide.

633. Deposit from the urine of the phosphate of ammonia and magnesia; analyzed by Dr. M. Gay. The patient (Drew) was sixty years of age, had an enlarged prostate, and died in the Mass. Gen. Hospital in the summer of 1838.

634. Urinary calculus, formed upon a portion of a suspender buckle, which, if



the patient's statement could be relied upon, was passed into the bladder, about two years before death; a section

of the calculus has been made, so as to exhibit the buckle, and the whole has been represented of full size in the adjoining figure. It is a white, earthy looking, homogeneous mass, and consists of the mixed phosphates, according to Dr. Gay's analysis. The patient was formerly an intelligent merchant, but became insane, entered the McLean Asylum in the year 1814, and remained in that Institution until June, 1845, when he died at the age of fifty-nine years. He was particularly remarkable for the pleasure which he seemed to take in injuring himself. Several years before his death he passed into the urethra a piece of slate, measuring one inch and a half by three-fourths of an inch, but this was removed by Dr. Bell, without making an incision, after it had been broken down with a pair of forceps. In November, 1843, he passed in a ring from the handle of a parasol, or rather two-thirds of a ring, which, if entire, would have measured two inches and three-fourths in diameter, and which nearly equalled the little finger in size; this he got fairly round the pubes, and it was removed by Dr. B. by an incision through the perineum, the suspender buckle being in the bladder at this very time, if the subsequent statement of the patient was correct. He gradually sank under the irritation produced by the calculus, and, on dissection, the bladder was found very much thickened, and

the urethra dilated so as nearly to admit the little finger.

*Dr. Luther V. Bell, Sup't of the McLean Asylum.*

635. Several calculi which were taken from the bladder of a Spermaceti Whale. Of thirteen specimens, which were sent to the Society, by Dr. Eastham, in the year 1841, the largest measured two inches and a half, and the smallest one inch in diameter; otherwise they were remarkably uniform in their character, being perfectly white, of a fine, compact structure, very distinctly laminated, and generally of a tetrahedral form, with well marked façettes; one of them has been sawed open. Analyzed by Dr. Charles T. Jackson, and found to consist of the phosphate of magnesia and ammonia, with some phosphate of lime, the same result having been obtained by Mr. Taylor, of London, in the examination of a specimen, which was sent to the Museum of the Royal College of Surgeons.

Three large boxes of these calculi were sent home to New Bedford, from the South Sea, by Capt. Paul Chase, of the ship Nassau; the whale was a very large "old bull," and so much emaciated as to furnish but very little oil. In the Museum at Nantucket, which was destroyed last year during the extensive fire at that place, there was a calculus from this same subject, and which perfectly resembled those already described, except that it was about as large as the double fist; upon this specimen was a label which stated that the weight of the calculi, which were removed, amounted altogether to eighty-six pounds.

636. Two calculi from the bladder of a Horse. They are nearly as large as the fist, and formed in very marked concentric laminæ; the surfaces being smooth, slightly concave, and of a triangular form. One of them has been sawed open. Analysis by Mr. Moses B. Williams, who was formerly a student of chemistry in Dr. Charles T. Jackson's laboratory; consist of the mixed phosphates.

637. Calculus, from beneath the prepuce of a Hog; it is considerably larger than a nutmeg, of a very regular rounded form, and consists, according to an analysis by Dr. Gay, of the mixed phosphates, no carbonate of lime being present. 1829.

*Dr. John Ware.*

638. Two calculi, from a case of old fracture of the spine (No. 142). One of them, the form of which is interesting in connection with the state of the bladder, is two inches in length, and consists, as it were, of a body, neck, and head; the body is about the size of a pullet's egg, the head about equals a small filbert, and the constriction at the neck is deep and defined. The second calculus, which was found resting upon the upper extremity of the larger one, is quite regular in its form and about the size of a small nutmeg. These calculi are white externally, and more or less so throughout, somewhat crystallized upon the surface, and consist mainly, according to Dr. Gay's analysis, of the urate of ammonia, with the mixed phosphates, these last alone being found towards the surface.
639. A calculus, about the size of a hen's egg, of a coarse texture, but with many delicate crystals upon the surface; urate of ammonia, mostly. From a patient of Dr. William Ingalls; a case of old injury of the spine (No. 143), the calculus being the immediate cause of death. The condition of the bladder was very similar to that of one already described (No. 604), the calculus being moulded into a thin defined sac, which had formed at the neck of the organ. 1842.
640. A calculus about the size of a hen's egg, and of a very regular oblong form. Having been sawed open, there is seen to be a hard, dark-colored nucleus just beneath the surface, and consisting principally of the urate of ammonia and uric acid; upon this there has been deposited in successive layers a large mass, which is partly hard, partly soft and crumbling, and which consists of the subphosphate of lime, and the phosphate of magnesia and ammonia in equal quantities; analyzed by Mr. J. Peabody. From a man who died at the Marine Hospital, Chelsea.  
*Dr. George W. Otis.*
641. Two calculi of an oblong form, one of them being nearly an inch and a half in length; but the other much smaller. From an old gentleman, eighty-two years of age, who for two years before his death had had urinary symptoms, under which he gradually sank. The kidneys were much disorganized, and the ureters distended and filled with pus. The largest calculus

has been sawed open, and consists of the mixed phosphates, with a nucleus of the oxalate of lime. 1846.

*Dr. Robert Thaxter*, of Dorchester.

642. Fragments of a calculus which was removed by the operation of lithotrity, at the Mass. Gen. Hospital, in the spring of 1846. The patient was the mate of a vessel, and about six months previously, whilst at sea, undertook to treat himself for a stricture of the urethra; as a substitute for a bougie, a piece of sealing-wax was used, and when this broke off, as might have been expected, a portion of it fell into the bladder, and formed the nucleus for a calculus, which must have been about the size of an English walnut. Five or six operations were performed, and with entire relief, the foreign body coming away, in a softened state, with those fragments which were the last to be discharged. 1847. *Dr. J. Mason Warren*.

643. A finely characterized mulberry calculus, consisting of the oxalate of lime, with a thin and uniform coating over the whole surface of uric acid; analyzed by Dr. Charles T. Jackson. It is about the size of a large English walnut, and, having been sawed open, one-half has been rubbed down and polished. Removed after death, from Dr. C. of Topsfield.

The specimen was sent to the Society by Dr. Peirson, with the following history of the case:—"Dr. C. was seventy-seven years of age, never had acute vesical symptoms, and of course, never suspected that he had a stone in the bladder. He sometimes had pain in the loins and thighs, followed by the discharge of renal calculi. On this account he made a free use of salætatus, and for twenty years or more he took it almost daily. His health was always most excellent, until within two years of his death, when he had a pain in the toe and foot, which seemed to threaten gangrena senilis; from this he recovered, but was soon afterwards attacked with the gastric affection, and the question arises, whether the salætatus had anything to do with it." 1837. *Dr. A. L. Peirson*, of Salem.

644. A calculus, about the size of a pea, and consisting mostly of the oxalate of lime; analyzed by Mr. Joseph Peabody. Passed from the urethra, by a man (Leggett) who was a patient in the

Mass. Gen. Hospital, with severe urinary symptoms, in the summer of 1845.

645. A small calculus from the kidney of a Sheep, one of its three faces having a beautiful pearly, and somewhat iridescent appearance. Analyzed by Mr. Peabody; before the blow-pipe it does not fuse nor decrepitate, but burns white, and leaves an alkaline residuum, which is partly oxalate of lime.

*Dr. Jeffries Wyman.*

646. Saccharine matter from the urine, in a case of diabetes mellitus. The patient was in the Mass. Gen. Hospital in the year 1828; a history of the case by Dr. Walter Channing, with a full account of the chemical analyses which were made at various times by Dr. Charles T. Jackson, was published in the Boston Med. and Surg. Journ. (February, 1829.)

647. Nitrate of urea, prepared from the urine, in the above case, and a few days only after the sugar was obtained.

*Dr. Charles T. Jackson.*

648. Saccharine matter from the urine, in a case of diabetes mellitus. From a woman, about fifty years of age; had had the disease for twenty months, and died at last of phthisis, the pancreas and both of the kidneys being diseased. A full history of the case was published in the New England Quarterly Journ. of Med. and Surg. for July, 1842, by

*Dr. John Homans.*

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## X. FEMALE ORGANS OF GENERATION.

### I. UTERUS.

649. Pelvic organs distended and dried, to show the relations of the uterus.

*Dr. Joseph Roby.*

650. Uterus and vagina divided throughout by a longitudinal septum. The patient was an unmarried female, thirty-three years of age, and well developed, the breasts having been rather un-

sually large. The catamenia had for a long time been scanty, and for two years before her death the periods had only continued for about a day; their recurrence, however, was regular; meanwhile she had many of the symptoms of anæmia, and finally died, as it was supposed, of pneumonia, although, on dissection, nothing was found but a serous congestion of the lungs. The uterus was enlarged, measuring, before being cut open, two inches and ten twelfths in length, and, at the fundus, two inches and nine twelfths in width, and one inch and two twelfths in thickness. Anterior face slightly convex; posteriorly, it was slightly depressed on the median line, but very much less so than in a similar case which is represented by Cruveilhier (Liv. iv. pl. 5, fig. 4.) The cavity was divided into two equal portions by a longitudinal septum, from two to three lines in thickness; arbor vitæ less marked than usual. One Fallopian tube and ovary only on each side. The vagina measured about two inches in length; septum continued from the uterus to within one-third of an inch of the external labia, the two canals being about the size of a large male catheter where they open into the vulva, but much larger towards the uterus. One of these canals has been cut open, and into the other a piece of whalebone has been passed; the uterine cavities are also set open by slips of whalebone. 1839.

651. Bilobated uterus. The right cornu is nearly in a continuous line with the vagina, and seems to have been the proper organ; length fourteen lines, and width at fundus one inch; Fallopian tube and ovary normal. The left cornu goes off from the right at an angle of  $45^{\circ}$ , and is altogether less developed than it; Fallopian tube short, and obliterated at its extremity, and in place of the ovary is a cyst nearly two inches in diameter, all the parts on this side of the uterus being united by old peritoneal adhesions when first exposed in the dissection. Cervix and os uteri single and well formed. Upon the posterior median line of the vagina is an appearance as if there had formerly been a septum, more or less perfect, which had been broken down; it is nearly one and a half lines in thickness, and, for the most part, projects about as much, but towards the vulva increases rather suddenly to one inch in width. From a patient of Dr. David Osgood, who died of phthisis. Catamenia

generally scanty. Married six years, but for the last two had not lived with her husband; had miscarried twice at about the third month, and had borne one child, which lived nine months. The husband had formerly mentioned the great difficulty which he had in coitû. 1836.

652. Malformation and imperfect development of the internal genital organs in an adult female. The subject of this case was a respectable German emigrant, twenty-five years of age; admitted to the Alms-house, under the care of Dr. Ezra Palmer, February 13th, 1838, and on the 15th of March was discharged. On the first of April she was re-admitted with œdema of the face and limbs, headache, &c., and on the 16th of the same month suddenly died; reported the catamenia as having been absent for five months, and Dr. P. regarded it as a common case of amenorrhœa. Dr. P. subsequently found a friend of the patient, and apparently a credible person, to whom the girl had made the following statements in regard to her case: that she was the daughter of a respectable farmer, and arrived in this country in September, 1837; that before she embarked her health had been perfectly good, and her menstruation regular; that after suffering much from sea-sickness, and being wrecked, the catamenia stopped, and, on her arrival, she had swelling of the limbs, spitting of blood, headache, &c., which symptoms were very naturally attributed to the amenorrhœa.

On examination after death, the external organs of generation were as perfectly well formed as in any adult female; but, on separating the labia, the vagina, or rather the vulva, was found to be about half an inch in extent, and to terminate in a cul de sac, the inner surface having, however, the usual appearance.

The pelvic organs being removed, the rectum was carefully dissected from the bladder, and the vagina was then found to be completely wanting. In the situation of it the cellular membrane, to the extent of seven or eight lines laterally, was a little thicker than it was on each side, but without any trace of a cavity.

The uterus consisted of two distinct cornua, of a regular, elongated, cylindrical form, extending transversely across the pelvis, and intimately connected with the fundus of the bladder.

Something like the rudiment of a body of the organ, was sent off by these to be lost insensibly in the cellular membrane which represented the vagina; it was about an inch and a half in extent, slightly thickened, fleshy to the feel, but without any cavity.

Left cornu three inches in length; three lines in diameter at first, but increased to five at the free extremity, which was rather blunt. It consisted of a coarse, loose, fibrous structure, of a reddish color, and having somewhat of a muscular appearance, but without any trace of a cavity. Fallopian tube three inches and three-fourths in length, and of about the usual size; fimbriated extremity large and free. Ovary about one-third as large again as usual, of a flattened form, smooth on the surface, and very flaccid to the feel, as if it contained many vesicles, though it was not cut open; hung free in the cavity of the pelvis in a sort of broad ligament, but much less to the left side than usual; ligament connecting it with the cornu quite distinct.

Right cornu six inches and a half in length, or more than twice that of the other, for the most part about three lines in diameter, but increasing to six at its ovarian extremity. It differed from the other cornu in structure, being white, rather dense, and more resembling the common "uterine tissue;" no trace of cavity. After it left the fundus of the bladder, it penetrated through the muscles, and appeared at the external inguinal ring; there it gave off a Fallopian tube, three inches in length, of about the usual size, and having a free and well developed fimbriated extremity. The ovary, which laid fairly in the groin between Poupart's ligament and the fascia superficialis, was one inch and a third in length, two-thirds of an inch in width, and one-third of an inch in thickness, of a very regular, oval form, a little flattened, rather firm, very white, and much more resembling a testicle than an ovary; it was nearly surrounded by serous membrane, forming a sort of tunica vaginalis, though between the opposing surfaces there were numerous adhesions; the Fallopian tube was mostly, if not entirely bound down by adhesions, besides being very much contorted, so that the limits between it and the cornu were not readily made out.

The kidneys were much and very peculiarly diseased, but

did not exactly resemble any of the forms described by Dr. Bright. The bladder, which was large and collapsed, contained three or four ounces of urine, some of which, being tested by heat, coagulated strongly.

In the preparation the uterus and its appendages are shown, the thickened cellular tissue in place of the vagina, the external organs, and the urinary bladder.

653. Inversion of the uterus. From a patient of Dr. George C. Shattuck; forty-three years of age, had been married seven years, and had had several miscarriages, but had never carried a child to the full period. For the last three or four years had suffered as much during menstruation as from labor. Three months before death there came on profuse flooding, which continued at intervals until the last six weeks, when it nearly ceased, and she had constant discharges of pus from the vagina. Had much pain and distress in pelvis, especially on motion or even in the upright position, and also with dejections; nausea and often vomiting when pain was severe; bowels costive; no dysuria; examination per vaginam always refused.

On dissection, about a quart of pus was removed from the cavity of the pelvis, after which the inverted uterus appeared, looking, as it still does in the preparation, not unlike an enlarged os tinæ, with some old peritoneal adhesions about it, the Fallopian tubes being mostly drawn in, but not the ovaries. Within the vagina the uterus formed a smooth, soft, livid, pyriform tumor about the size of a large orange; the inversion is nearly complete, and the remains of the os tinæ are seen about the neck of the tumor. 1837.

654. Polypus uteri. The patient was fifty years of age, and had formerly had several children, but was afterwards divorced from her husband, and led a very dissolute life. During the last year occasional flooding, though not profuse; three or four weeks before death, however, it increased so as to cause prostration, and was soon followed by great pain and tenderness in the abdomen; for this she was vomited and purged actively by an empiric, and died under the operation of the medicines, universal and acute peritonitis being found on dissection. The uterus was enlarged, measuring four inches and a half in

length, two and a half in width, and nearly one inch at the thickest part; muscular structure not developed as in the case of fibrous tumors. The polypus grows from the fundus, and was just long enough to protrude through the os tinæ, having a long peduncle, but enlarging at the extremity to one inch in diameter. This last part, which was probably the source of the hæmorrhage, was quite soft, of a dark red color, and, being deeply torn, showed a coarse, loose, stringy rather than fibrous tissue; the peduncle was firmer and not discolored, and the surface was every where smooth except where torn. 1839.

Another case of polypus will be hereafter reported, in connection with a case of ruptured uterus.

655. Uterine polypus, of a regular, pedunculated form, one inch and a half in length, somewhat fissured upon the surface, and of a dense, white structure. Removed by an operation. The patient had at the time an infant fourteen months old, and had been subject for five years to what she regarded as prolapsus uteri. Did well during her pregnancy and confinement, and continued pretty well until the spring of 1841, when she flowed almost constantly; from this, however, she was at last relieved. Had also about the same time severe bearing-down pains, and, as she thought, a protrusion of the os uteri externally; an examination was then made by Dr. John Ware, her attending physician, and the polypus was discovered. In August it was removed by Dr. George Hayward, with the scissors. Very little blood was lost during the operation, but, five or six hours afterwards, on the patient's rising from her bed, profuse hæmorrhage took place; this, however, was soon checked, and she has had no further trouble since. Dec. 1842.

656. Prolapsus uteri. The pelvic organs have been removed entire, and the preparation shows a complete prolapsus, the appearances, both externally and within the pelvis, being most accurately represented in Cruveilhier's figure of a similar case (Liv. xvi. pl. 5); the uterus could very easily be pushed back, and then had the same constricted appearance which is shown in one of the figures. The patient, an octogenarian, died of meningeal apoplexy, under the care of Dr. William P. Dexter, and the date of the prolapsus is unknown. 1844.

657. Fibrous tumors of the uterus. They are so developed throughout its substance that the whole mass appears of a rounded form, and nearly as large as a child's head. The cavity of the uterus is much elongated, and the muscular and vascular structure are developed as in gestation; the enlargement of the blood-vessels is particularly well shown, as the specimen was taken from a dissecting-room subject which had been injected.

658. Several fibrous tumors, more or less pedunculated, and hanging, as it were, from the peritoneal surface; the largest, about the size of an orange, has been cut open, and is a very fine specimen of the fibro-cellular structure. The uterus itself is very little enlarged.

659. Portion of a large fibrous tumor of the uterus, in a state of inflammation or disorganization, from a woman who died after an abortion at the seventh month of gestation. The patient was twenty-eight years of age, and had been married for two years. Was first seen by her physician, Dr. M. S. Perry, November 14th, 1838. Reported then as follows:—Health always good, except for dysmenorrhœa, until seven months since, when she became pregnant with her first child. From that time until August she had much vomiting, with pain in the right side of the abdomen; then an attack of dysentery, which lasted for two or three weeks, followed by increased pain in the side, with tenderness on pressure, indigestion, diarrhœa most of the time, nervous symptoms, and prostration of strength which confined her to the room. When seen on the 14th, she was uncommonly large for the seventh month; tenderness extreme on right side; countenance bad; pulse quick and feeble, and skin dry; diarrhœa continued, and, on walking, she suffered from bearing down, and from dyspnœa. The pain was relieved by external applications, but the other symptoms continued the same, and on the 26th of the same month she aborted. After the placenta came away, a circumscribed tumor was found in the right side of the abdomen, extending from the crest of the ilium to the ribs, and forwards as far as the umbilicus. For the first two days she was very comfortable; on the third there was some appearance of milk, but the lochia

diminished and there was considerable heat of the skin; on the fourth day diarrhœa, with some tenderness of the abdomen and meteorism, and in the night delirium. From this time she gradually sank, and died on the eleventh day, with symptoms, as it was supposed, of peritonitis.

On dissection, the peritoneum was found healthy, but the inner surface of the uterus was inflamed, as shown by redness, and an extensive deposit of recent, opaque, whitish lymph. The tumor arose from the right side of the fundus by a small pedicle of uterine tissue, was situated in front of the ascending colon, and connected posteriorly with the neighboring parts by old adhesions; it was about six inches in diameter, and unequally firm, feeling boggy in some parts, and in some encysted. On incision, it was found to consist mainly of the usual fibro-cellular structure, but much broken down, and containing throughout its substance numerous, very irregular cavities, in which was a thin serous fluid such as is often discharged from a scrofulous abscess, the parietes being whitish, opaque, soft, and of a very loose texture. The cavities were not large, and some of them appeared, to use a comparison of Cruveilhier's, like little geodes in the midst of the sound structure. Immediately in the neighborhood of one of the largest cavities the fibrous structure was infiltrated to a considerable extent with an opaque, yellowish lymph, as if preparatory to breaking down, but there was nowhere in the tumor any redness, nor any well formed pus.

This change in the fibrous tumor is figured by Cruveilhier. (Liv. xxiii. pl. 6.) As the result of pregnancy, however, it has been particularly described by Dr. Ashwell (Guy's Hospital Reports, No. II.); he thinks that it takes place during the latter months, and that, being highly dangerous to life, premature labor should be induced, but, in the above case, the disease was already quite advanced at the seventh month, and had probably been going on for some time, and in Dr. A.'s first case, in which, judging from his figure, the disease must have been still more extensive, the patient was only advancing towards the sixth month; the change may, perhaps, then, begin in the early months of gestation. It may be remarked that the above case differs from those observed by Dr. A., inasmuch as he found the uterus healthy or very nearly so, and he

remarks that it has been found so in the majority of cases.

660. A single, rounded tumor, four inches and a half in diameter, and developed entirely in the posterior parietes of the uterus. The structure was very peculiar, being neither fibrous nor cellular, but rather resembling in appearance and consistence the fibrinous deposit from the blood, the whole being rather moist, and of a dull, pale red color, as if stained by blood. One regular cavity is seen, about two-thirds of an inch in diameter, quite smooth inside, and partly filled, when recent, with a thick, pasty, reddish substance; cut surface generally rough, with many small holes and fissures, and in one place the tumor had the thin, white, parchment-like envelope, which is sometimes met with in these cases. This was regarded as a fibrous tumor in a state of degeneration. The uterus and tumor, together, in this case, weighed three pounds, and formed a regular, rounded mass, which seemed to fluctuate before being opened. The cavity of the uterus is enlarged, and contained a bloody mucus, and the muscular and vascular structures are seen to be very strongly developed; cervix not involved. Ovaries small, and adhere to the tumor.

From a patient of Dr. John Jeffries; an unmarried lady, aged forty-four years, and who died of acute dysentery. Tumor had existed for at least five or six years, the abdomen being quite prominent; never interfered with the pelvic organs, the menstruation being regular, although the general health had rather declined. 1840.

661. Ossification of several fibrous tumors; they hang off from the peritoneal surface, and one of them, which is about the size of a hen's egg, has been sawed open. The organ itself is almost buried by them, but seems otherwise not much affected. From a woman, seventy years of age.

662. Ossified tumors dissected out from the uterus, and dried. One of them, which is about an inch in diameter, hung from the fundus, and was covered only by the peritoneum; the other, about half as large, was imbedded in the substance of the organ.

663. Corroding ulcer of the uterus. The os tincæ, cervix, and a great part of the body of the organ are entirely destroyed, and the ulceration has proceeded far down the vagina, but the surrounding parts are neither indurated nor thickened; ulceration well defined, but not deep. The disease is complicated with several simple, fibrous tumors, which are seen attached to the fundus of the uterus, one of which is cut open to show its structure, and being nearly as large as the fist, had formed a tumor which was felt for some months before death. The other organs of the abdomen and thorax were healthy. From a patient of Dr. D. H. Storer; she was a married woman, forty-nine years of age, but had not lived with her husband for some time, having once received the venereal disease from him; never had children. The uterine symptoms had existed for more than a year; pain very severe; discharge from vagina, which, towards the last, was excessively fœtid, but never any hæmorrhage; became sallow, very much emaciated, and died worn out by her extreme sufferings. 1835.
664. Greater part of the uterus destroyed by cancerous disease. The patient was about sixty years of age, had had symptoms of pelvic disease for about eight years, and for the last six months incontinence of urine.
665. Extensive, old adhesions about the appendages of the uterus, obliteration of the extremities of the tubes, and an encysted state of the left ovary; from a woman who had been a prostitute for two years and a half or more. The uterus appears healthy. 1838.
666. Dropsy of the Fallopian tube. The serum having been forced out, the tube has been distended and dried. 1840.
667. Cholesterine from the Fallopian tube. From a patient of Dr. Charles E. Ware; died in February, 1846, of encephaloid disease of the stomach, the other organs being sufficiently well, except for two biliary calculi in the gall-bladder. The extremity of the right Fallopian tube was dilated into a cavity about the size of a filbert, and was filled with the cholesterine, which appeared in the form of yellowish white, dryish, closely packed

scales, having a beautiful pearly lustre, easily rubbed down, and shown to be greasy when heated upon paper before the fire; this was a shut cavity, and was lined by mucous membrane. The rest of the tube, having been cut open, was found to be coated with a thin layer of the same deposit, so as to resemble the inside of an oyster shell; this was very readily rubbed off, and then the mucous membrane presented its usual appearance. On examination under the microscope, by Dr. John Bacon, Jr., the deposit presented the appearance of rhomboidal scales, and exhibited colors with the polarizing attachment; a portion of it was afterwards prepared by Dr. M. Gay, and resulted in a delicate white substance, which, being again examined by Dr. B., gave very perfect crystals, and much more brilliant colors than the crude mass. A quantity of the prepared cholesterine is preserved in a phial, and some upon a watch-glass.

Since the occurrence of this case cholesterine has been shown to the Society, taken, in one instance, from the fluid of a hydrocele, and in another, from the substance of the kidney.

668. Fallopian tube distended by tuberculous matter. The inner surface of the uterus was similarly diseased. From a case of phthisis. May, 1844.

## II. VAGINA AND EXTERNAL ORGANS.

669. The opening from the vagina into the vulva traversed by a firm, fleshy band, so as to be equally divided upon the median line; from a new born child, and otherwise well formed.

*Dr. Charles G. Putnam.*

670. The bowls of two large tea-spoons, with a small portion of the handle, a broad, gold finger-ring, and two pieces of crockery ware. Removed by Dr. S., with a pair of dressing forceps, from the vagina of a patient at the Lunatic Asylum, South Boston; they had probably been there for about four months, and had caused great irritation. February, 1844.

*Dr. Charles H. Stedman.*

671. Several pieces of thick, white, dense, fibrous membrane, four

or five inches in length, and which were reported by a patient, who had suffered from dysmenorrhœa, to have been discharged from the vagina. In the same jar there have been placed some strips of ligamentum nuchæ, and it is evident that they are the same substance. The patient was quite a respectable woman, and the physician, who brought the specimens to the city, for a consultation upon the case, seemed to be a man of intelligence, but would not listen to the idea of imposture; about a year afterwards he was again in the city, and was as firm in his belief as before, the membrane, as he said, being still occasionally discharged.

672. A large, warty tumor, removed from the labia. Weighed one pound and a quarter, when recent, is imperfectly lobulated, generally quite dark on the surface, but in one or two places has a smooth, white cicatrized appearance; consistence fleshy, and, in structure, appears as if it might be allied to elephantiasis. One very distinct lobe, which is about the size of a fig, arose from one of the internal labia, and almost the whole of the remaining mass was a growth from the one upon the other side. It was removed by Dr. William J. Walker, with a portion of the clitoris, but the disease returned not long afterwards; hæmorrhage moderate during the operation. The patient was an unmarried, respectable female, thirty-three years of age, and was under the care of Dr. George Bartlett; the disease had been forming for about fifteen years, and troubled her only by bulk and weight of the mass. 1839.

673. A second specimen, similar to the last; removed by an operation. The tumor is nearly as large as the two fists, and very firm to the feel; warty appearance strongly marked, deeply lobulated, and surface dark, with one smooth, whitish cicatrix as in the other specimen. The patient was a black girl, of bad habits.  
*Dr. S. D. Townsend.*

674. A tumor, which was removed by ligature from one of the labia; attached by a small pedicle, but resembled pretty nearly the last two specimens. It was nearly three inches in length, of a flattened, oval form, dark colored, wrinkled rather than warty upon the surface, quite flaccid to the feel, and, being cut

through on one side, appeared to consist of a simple, lax, cellular tissue. The patient was a married lady, thirty-seven years of age; the tumor had been forming for about two years, and appeared at first as a small wart; caused no trouble except from its weight, being six inches in length before removal, and filling with fluid when she was in the erect position. 1842.

*Dr. John Homans.*

675. Foul ulceration of the whole inner surface of the vagina, but without any appearance of malignant deposit. An opening into the rectum is seen, nearly two inches in length, and another was about forming into the bladder. The uterus was rather small, with corroding ulceration of the os tinæ, and acute inflammation of the inner surface; this organ and the vagina are shown, cut open. From an Alms-house patient; she was sixty years of age, had been long subject to uterine hæmorrhage, and for the last five years to discharge from the vagina, which was sometimes fœtid and sanious; towards the last her sufferings were very great, and for some weeks before death a free communication existed between the rectum and bladder. The case had been regarded as one of cancer of the womb. 1834.

*Dr. J. W. McKean.*

### III. OVARIES.

676. Cretaceous deposit upon the surface of the ovary. It appears in the form of an opaque, white crust, with some small grains, and is scattered over the surface to which they adhere. From a middle-aged woman, who had been married for several years, but had never been pregnant, there being some old adhesions about the ovaries, with an obliteration of the extremity of one of the Fallopian tubes; the peritoneum, otherwise, was healthy. In the preparation, the great mass of the ovary has been dissected away, and the portion of the surface upon which the deposit is formed, has been spread upon a black board and dried. This specimen having been very fully examined by Dr. John Bacon, Jr., it appears that the deposit consists of the phosphate of lime, with animal matter, there being no trace of the triple phosphate; under the microscope, it has a waxy lustre, and the surface is mamillated, but there is no crystalline appearance. 1847.

*Dr. J. B. S. Jackson.*

677. Encysted disease of the ovary. The tumor is about half as large again as a man's head. Cysts distended and dried, with the uterus attached. *Dr. S. D. Townsend.*

678. Encysted ovary; about the size of a hen's egg. Hair is seen, which was contained in the cysts, and mixed, as usual, with fatty matter. The patient died of phthisis.

*Dr. J. W. McKean.*

679. Encysted disease of the ovary, with a considerable quantity of hair attached to the interior, as represented by Cruveilhier (Liv. xviii.) The mass was large enough to fill the cavity of the pelvis, and was formed mainly by a single cyst, which was filled with clear serum. The hair was contained in a separate cyst, with fatty matter, and the surface from which it grew consisted apparently of well formed cutis and cuticle, the pores being as distinct as upon any part of the scalp; some of the hairs were free, and without any appearance of a bulb. There are also two small pieces of bone in the parietes of the cyst. A dry specimen.

From a patient of Dr. J. M. Whittemore, of Brighton; a lady, twenty-one years of age, who died of inflammation of the articulations of the pelvis, with phlebitis, after her first confinement, having previously enjoyed full health. 1837.

680. Hair from an ovarian cyst; mostly free in the fatty matter, but some was found growing from the interior of the cyst. From a dissecting-room subject.

681. Another specimen, a small portion of the dried cyst having been preserved, with some of the hair attached. The patient, an unmarried woman, thirty-five years of age, had an ovarian tumor of immense size, which had been forming for about seventeen years. The contents of the cysts were various, and in one of them, which was about the size of an orange, was found the hair. 1838.

682. Diseased ovary, from a cancerous subject. It is of a regular, flattened, oval form, six and a half inches in length, and, on incision, after having been in spirit for several years, appears

to consist of an uniform, whitish, condensed, cellular tissue, with scarcely any fibrous structure. The uterus is seen attached, and is healthy. As there was cancer of the bones in this case (Nos. 97 and 219), and of the breast (No. 685), it was thought that the disease of the ovary might be of the same nature, but this is doubtful. *Dr. S. D. Townsend.*

683. Diseased ovary, from a patient of Dr. Charles G. Putnam; a little girl, six years of age, who died of very extensive malignant disease of the abdomen. (No. 509.) Both of the organs were greatly enlarged, of a regular, oval form, very soft, and of rather a bright red color externally. That on the right side formed a tumor which was felt three months before death, and measured five and a half inches in length; on incision, it was found to consist of a coarse, cellular tissue, abundantly infiltrated with serum, and containing some whitish, carcinomatous deposit. The left ovary, which is the one preserved, measured three inches and a half in length, and resembled the other in structure, except that it contained much effused coagulated blood. The Fallopian tube is seen to be thickened, and much elongated by the growth of the ovary, as the neck of the womb sometimes is in case of disease or displacement of that organ. 1840.

684. Both of the ovaries preserved in connection with the uterus. They are about the size of a large orange, of a rounded form, irregular or knobbed on the surface, and solid to the feel. One of them having been cut open, was found to consist of very fine cells, filled with a clear, yellow serum, but without any appearance of distinct cysts, and without carcinomatous deposit or effused blood. The uterus is healthy. The patient was an unmarried female, forty-one years of age, and died at the Mass. Gen. Hospital, of scirrhus stomach (No. 483), with ascites, and a granulated disease of the peritoneum. April, 1832.

#### IV. BREAST.

685. Cancer of the breast. The bones were extensively diseased, and one of the ovaries. (No. 682.) *Dr. S. D. Townsend.*

## XI. MALE ORGANS OF GENERATION.

## I. TESTICLE.

686. Absence of the testicle. The vas deferens, which has been preserved, is of the usual size and pervious, and terminates rather bluntly in a sort of convolution, in the inguinal canal; artery and veins of full size. There was no appearance of a cicatrix, and Dr. C. could not learn from the family that the testicle had ever been removed. Upon the opposite side there was a hydrocele, with slight enlargement of the organ. From a patient of Dr. Henry G. Clark; a man, fifty-five years of age, who died from poisoning by arsenic. 1841.

687. A loose body from the cavity of the tunica vaginalis; it consists of a hard, ossific mass, covered by a thin layer of cartilage, and is about the size of a pea. From a dissecting-room subject. The testicle and serous membrane were healthy, except that from the last there hung off a slender mass of half organized lymph about a quarter of an inch in length.

*Dr. Henry J. Bigelow.*

688. Several fragments of ossific matter, from the testicle of an old negro, the organ being about three times its usual size. 1834.

*Dr. Francis W. Cragin, of Surinam.*

689. Ossific deposit, about an inch in length, in the substance of the testicle; organ otherwise healthy, although there is seen to have been an universal old adhesion of the tunica vaginalis. From a patient of Dr. A. A. Gould; an old syphilitic case; from the same subject as No. 96. The testicle has been cut open.

690. Scrofulous disease of the testicle; the organ is about twice its usual size, and is converted into a solid, yellowish, curdy substance. Cord healthy.

*Dr. S. D. Townsend.*

691. A second specimen; not cut open. *Dr. S. D. Townsend.*

692. Fungous disease of the testicle. The organ is considerably enlarged, and presents through the scrotum an extensive, raised, foul, shreddy, ulcerated surface. It was removed at the Alms-house, and the patient did well.

*Dr. Winslow Lewis.*

693. Cancerous disease of the testicle; removed by Dr. Charles T. Jackson, from a patient of Dr. A. A. Gould. The organ was about the size of a large orange, and consisted mainly of a substance like half-organized lymph; the upper portion was semitransparent and indurated, but posteriorly it was soft, and highly vascular. Cord quite healthy. The patient was a laboring man, twenty-five years of age, and had had pain and swelling of the organ for six months, caused by an injury which he received when lifting a barrel of apples. Died about a year after the operation from a return of the disease.

694. Disease of the testicle. The specimen was brought to the Society with the following history, by Dr. Benjamin Cushing, a nephew of Dr. Thaxter, in whose practice the case occurred. The patient, a stout, healthy child, was first seen by Dr. T. in September, 1843; the left testicle was then about the size of a hen's egg, and there was considerable external redness, the disease having been discovered about a fortnight before. Leeches and a saturnine lotion were used without effect, the tumor increased in size, and in November the patient was carried to the Mass. Gen. Hospital for further advice; an exploring needle was passed in, but blood only was discharged; the question then was whether the case was one of hæmatocele or malignant disease, and it was proposed to make an incision, but to this the child's mother would not consent. From this time until the following September the patient was under the care of different practitioners, but was often visited by Dr. C.; the tumor gradually increased in size, until it measured about seven inches in length, and five inches from before backwards, pressing up firmly against the abdomen, and so far involving the penis that the situation of this organ was only indicated by a fold in the skin. About the first of September Dr. T. was again called; the surface of the tumor had recently given way, and the integument was destroyed to the

extent of about three inches; hæmorrhage had already once or twice occurred, and the blood was issuing in a jet, the tumor, meanwhile, having considerably diminished in size. From this time the bleeding frequently recurred, and the child died, exhausted, about the last of September, 1844, aged five years and eleven months. Had no pain in the testicle, nor was his general health affected until towards the last, when he became much emaciated.

The testicle is of a regular, oval form, and about as large as the double fist. Being cut through, the body of the organ measures, after having been in spirit, four and a half by two inches; the color is whitish, the consistence fleshy, and the structure close and compact, the appearance throughout being perfectly uniform, except for two or three cavities, half an inch or more in diameter, these last being perfectly defined, smooth and polished upon the inner surface, and, when recent, filled with clear serum. The epididymis is proportionably enlarged, of a purplish color when recent, and now darker than the body of the organ, the limits between the two being well marked. In no part of the mass is there to be seen any trace of the original structure, nor any appearance of malignant disease; the ulcerated surface is covered with a blackish crust, the remains probably of the blood which was discharged during life. The cord is healthy, as was the other testicle, and, so far as seen, the organs of the abdomen.

*Dr. Robert Thaxter, of Dorchester.*

695. Encephaloid disease of the testicle, removed by an operation. The patient was a healthy-looking infant, seventeen months old, and the disease was first observed at the age of six months. The organ is about as large as that of an adult, and the body of the gland is completely disorganized, presenting as perfect a specimen of the disease as would ever be seen in an older subject. October, 1846. *Dr. Winslow Lewis.*

## II. PROSTATE GLAND.

696. Lateral lobes of the prostate gland much enlarged, and, as is often the case, the left more than the right; no appearance of a middle lobe. Bladder sacculated. The patient, a healthy-

- looking farmer, over seventy years of age, died of disease of the heart, having had dysuria for some years, though not severely.
697. Lateral lobes of the prostate enlarged, but much less so than in the last specimen; middle lobe also enlarged. Bladder sacculated.
698. Enlargement of the lateral and third lobes of the prostate gland; bladder thickened and sacculated. The patient was about sixty-five years of age, and had suffered much from the disease for several years. 1841. *Dr. George C. Shattuck.*
699. Portion of a prostate gland, showing calculi in situ, many others having been removed. (No. 700.) From a patient of Dr. George C. Shattuck, a gentleman, sixty-five years of age, who had been long subject to dysuria, and died at last from disease of the heart. The ducts of the gland are much enlarged, and crowded with calculi, the substance, also, seeming to be filled with fine particles of the same. 1838.
700. A collection of prostatic calculi from the above case. (No. 699.) They are well characterized, and, having been analyzed by Dr. Charles T. Jackson, were found to contain 64 per cent. of the phosphate of lime, 8 per cent. of the carbonate of lime, and 28 per cent. of xanthic oxide, five grains being the amount that was used. Treated with nitric acid and warmed, a fine lemon-colored solution was rapidly effected, with a disengagement of gas, and, when the solution was saturated with liquid ammonia, a fine orpiment yellow precipitate was formed, which was the xanthic oxide mixed with phosphate of lime. 1838.

### III. PENIS.

701. Penis injected and the bladder distended and dried.
702. Corpora cavernosa inflated, dried, and cut open.
703. Penis of a negro, showing an entire absence of the frænum, as

seen in the Chimpansé, and without any appearance of its having been destroyed by disease. 1842.

*Dr. Samuel Parkman.*

704. Hypospadias, the urethra terminating beneath the glans penis; from an adult.

705. Venereal warts. The prepuce is much enlarged, and its inner surface nearly covered with the excrescences, the glans itself being healthy. The patient, a young negro, entered the Marine Hospital at Chelsea, in consequence of a severe hæmorrhage from the diseased surface; there was complete phymosis, with several fistulous openings through the prepuce. The patient would not consent to the usual operation, but insisted upon amputation of the organ, which was at last performed.

*Dr. Charles H. Stedman.*

706. A very highly finished pencil drawing of the appearances in the last case before the operation; by

*Dr. J. Francis Tuckerman.*

707. "Penis and scrotum of a subject who was syphilitic for many years before death, but had recovered with the loss of a great portion of the penis; a bougie is in the urethra."

*Dr. S. D. Townsend.*

708. Cancer of the prepuce, the glans being apparently healthy; amputation was performed, but the disease afterwards returned, and proved fatal.

*Dr. Abel L. Peirson, of Salem.*

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## XII. UTERO-GESTATION.

### I. PARTS BELONGING TO THE MOTHER.

709. Uterus at a very early period of impregnation; from a patient of the late Dr. Charles T. Hildreth. Twenty-seven days before her death, the subject of this case passed the evening

with a man, from whom she had been receiving attentions, and it was ascertained that they had not been alone together for a considerable time before nor after that date. Had not menstruated for six weeks, and on this account, according to her statement, she took half an ounce of the oil of tansy; violent spasms ensued, and she died in rather less than two hours. A full account of the case and of the symptoms which were produced by the poison, were published in the Boston Medical Magazine for November, 1834.

The uterus was carefully examined twelve hours after death, and the following appearances were noted:—Length of the organ four inches. Fundus and body doughy to the feel, the first being of a dark red color. Os tinæ quite prominent, thick, and fleshy, and upon the inner surface red, as from mechanical irritation. A crucial incision having been made through the anterior face, the cavity of the organ was fully exposed, the parietes being not much thicker than in the unimpregnated state. The inner surface of the body and fundus, to the depth of two or three lines, had a somewhat fibrous appearance, but was exceedingly soft, and almost pulpy; the line of demarcation between this and the firmer substance beneath being sufficiently defined, although the two could not be separated like two distinct textures; towards the fundus this surface was of a reddish color, but generally it was whitish, though not opaque. Near the centre of the fundus there was a rounded cyst, of a dark reddish color, and about half an inch in diameter. On cutting this open, an ovum soon made its escape, seeming to have little or no connection with its interior. Within the chorion the amnion was seen as a very delicate cyst, and about the size of a robin-shot, and still within this there were distinctly seen the rudiments of the embryo. The cyst which contained the ovum was closely connected with the inner surface of the uterus, although quite different from it in texture, being thin, moderately firm, and upon its inner surface smooth and polished, though rather irregular. Cervix not much changed, and its cavity not closed, except by viscid mucus; the openings into the Fallopian tubes appeared also to be free. The left ovary contained a corpus luteum, about the size of a marble, the yellow portion being more than a line in thickness, and the cavity being filled with coagulated blood. In the

preparation, the ovum is seen floating at the bottom of the jar, and the structure of the cyst at the fundus of the uterus, and of the softened inner surface of the fundus and body is satisfactorily shown.

The softened inner surface of the uterus above described was undoubtedly the decidua vera, and the case is interesting inasmuch as the view which was taken of it at the time was in accordance with what has since become an established fact in science. The decidua has generally been considered as an adventitious membrane thrown out upon the inner surface of the organ, and of which the organization is, to say the least, very questionable; and it was only in the year 1834, the very year when the above case occurred, that Weber promulgated what is probably the true doctrine in regard to this subject, as appears in Müller's Physiology. When the above case was published, the question was asked, in regard to the softened tissue, "was this the decidua? or is it the internal surface of the womb in a softened state?" We did not dare to express our conviction that it was the latter, as it was so opposed to the doctrines of the day, but, in the notes of the case, which were taken at the time, after a description of the tissue in question, it is distinctly stated that there is "no appearance of anything like decidua."

710. Uterus of a woman who died about the third month of pregnancy, from excessive vomiting. The organ is partially laid open by a crucial incision, and shows the two portions of the decidua and the chorion; the corpus luteum is also seen in the left ovary. From a patient of *Dr. John Ware.*

711. Tubular pregnancy. The uterus measured three inches and one-fourth in length, and was changed in structure as usual in gestation; inner surface softened, but without any well marked decidua. The outer half of the right Fallopian tube was enlarged to about the size of the last joint of the thumb, and, having been cut open, the membranes of the ovum are shown, with a well developed fœtus, three-fourths of an inch in length.

The lady from whom this specimen was taken, was a patient of Dr. John D. Fisher; eighteen years of age, and had been

married only ten weeks. The catamenia appeared on the day of her marriage; at the end of three weeks it appeared again, as she thought, and in two weeks more it appeared for the third time; discharge unusually profuse, of a bright red color, and continued for a week without much intermission. After the last period it frequently recurred, and, on any considerable exertion, became so profuse as to cause faintness. On the morning of the last day she was unusually cheerful, and had been exercising freely, so as to become somewhat fatigued. At 11 o'clock, A. M. profuse flooding came on, and she became excessively faint; at one o'clock Dr. F. found her with symptoms of complete collapse, as from hæmorrhage; under the use of stimulants she revived somewhat, but remained in a fluctuating state until nine in the evening, when re-action became pretty fully established; soon after this she fell asleep, and slept until about half past three, when she awoke quite faint, and so continued until seven in the morning, when she died, twenty hours from the time of the attack. There had been slight pain with tenderness just above the right groin, a sense of fulness in the abdomen, and an unusual degree of fulness over the lower part, on examination by the hand.

On dissection, there were found three quarts or more of blood in the peritoneal cavity, the right Fallopian tube having ruptured at the point which is marked in the preparation by a reddish brown coagulum.

In several other cases of tubular pregnancy which have occurred in this city, there has been observed a tendency to hæmorrhage, as in the above case, though not to the same degree, the patient generally regarding the discharge as an irregular flow of the catamenia, and as an evidence that pregnancy did not exist.

712. Oviduct of a domestic fowl, distended near its upper extremity by the materials of several eggs, which had been arrested in their progress downwards, and form a rounded tumor as large as the fist, and consisting of a solid, opaque, albuminous-looking substance. The organ itself has been preserved throughout its entire length, and appears healthy. One or two other specimens have been shown to the Society, and a similar one is described in the Catalogue of the Hunterian Museum, (Part I. 970.)

*Dr. J. B. S. Jackson.*

713. A transverse section of the ovary of a Striped Bass (*Labrax lineatus*), distended by ova, which have been formed upon the inner surface during successive years, three or four distinct, concentric layers being now seen. The section measures about three inches in diameter, the whole mass is quite solid, and the enveloping cyst, or ovary, seems not to be thickened.

Dr. D. H. Storer.

714. Extra-uterine fœtation; fœtus removed through the anterior parietes of the abdomen by Dr. Nathaniel Miller, of Franklin, and presented by him to the Society, May 10th, 1841, with the following history of the case:—The patient was a married woman, thirty-four years of age. Pregnancy occurred about seven years since, but nothing remarkable occurred until she arrived at the full period, when the motions of the child became very active, and continued so for about a month; they then ceased altogether, and she felt a dead weight, becoming also, as she said, thinner about the waist; the lochia came on, and continued for about a week, and for a time there was a flow of milk. From that time she kept about her house, her health being sufficiently good; was perfectly sensible of the presence of the fœtus, and imagined that she could feel the bones. In about six months she again became pregnant, and, to sum up the case in a few words, she has borne, during the last seven years, three living children, and carried them to the full period, having had one previously. In December, 1840, she consulted Dr. M. with regard to an operation; for about six weeks there had been considerable pain and tenderness in the abdomen, with loss of appetite and flesh; a very hard tumor was found about the middle of the abdomen, perhaps rather more to the right side, but the parts of the fœtus could not be felt. Dr. M. thought the expediency of an operation doubtful, and saw her again in about a fortnight, when she had altered decidedly for the worse. About the first of January the operation was performed. A small incision having been made below the umbilicus, the tumor was punctured with a trocar, and, when the opening was sufficiently enlarged, the fœtus appeared, lying coiled up in the most compact form; the upper extremity presented, but one foot was seized, and by this it was extracted. Something was found which looked like a cord, but nothing

like a placenta. The fœtus weighed four pounds and a half after the extraction, and appeared fresh, excepting one foot, which was somewhat decomposed; some of the other small bones of the hands and feet, and some of the cranial bones are seen in the specimen to be more or less denuded, but this, Dr. M. thinks, is owing to decomposition since the removal. On the day after the operation, Dr. M. found some traces of fœcal matter about the wound, and these continued unequivocally to be seen so long as she lived; death occurred in about a month, and it was supposed that a communication had formed before the operation between the intestine and the sac which contained the fœtus. Body not examined.

715. Bones of an extra-uterine fœtus, removed from the bladder, by the operation of lithotomy, by the late Dr. Joseph Bossuet, of this city, the following history of the case having been published by Dr. B. in the sixth volume of the *New England Journ. of Med. and Surg.*:—

In the month of October, 1807, Mrs. C., of Braintree, became pregnant, and from that time suffered very great distress, with pains shooting from the hypogastric to the epigastric regions, until the latter part of the following spring, when the signs of labor came on; as the child could not be felt, large doses of opium were given, and in the course of a fortnight the pains abated. For two months afterwards she was much troubled by a disagreeable “drawing” sensation, and the abdomen was greatly enlarged, but this, after some time, gradually subsided. During the next three years there was not much distress, but, at the end of that time, she began to have very acute pains, with profuse evacuations by the urethra, of a matter, which was sometimes yellow, sometimes bloody, and very fœtid, some very small bones being voided at the same time. A communication also took place between the rectum and bladder, so that the urine and fœces would pass either way.

During the five years preceding Dr. B.’s first visit to her, the patient suffered excruciating pain, day and night. On the 20th of May, 1816, he was called, and, having ascertained the nature of the case, advised an operation, which, on the 17th of June, was performed, one hundred and forty-six bones of a

seven months fœtus being removed, together with a stone about the size of an olive. Dr. B.'s report of the case was dated March 24th, 1817, at which time the patient had fully regained her health, and was quite free from pain, the communication between the rectum and bladder, however, not being wholly obliterated.

The bones were given to Dr. B. by the patient herself, who is now (May, 1841) living in a neighboring town. Since the operation, her general health has continued to be sufficiently good, so that she has attended to her household affairs, although she has never been able to retain her urine. The bones are displayed upon a black board, with the fragments of the calculus.

*Dr. Henry I. Bowditch.*

716. An extra-uterine cyst, filled with fœtal bones; from a Sheep. A dry specimen. 1842. *Dr. J. V. C. Smith.*

717. Uterus of a woman who died three days after labor at the full period. *Dr. Winslow Lewis.*

718. Polypus of the womb; laceration of the organ during a difficult labor; malformation, the cavity of the fundus being divided by a septum. The specimen, being very bulky, has been preserved in an open jar.

From a patient of Dr. George Hayward; a lady, thirty-nine years of age; had had for at least two or three years what she regarded as a prolapsus of the womb, but which was undoubtedly the polypus, although she had in the meantime borne one if not two children. In March, 1837, labor again came on, and, when Dr. H. saw her, towards evening, the arm was found to protrude; the child was turned about 7 P. M., and the labor soon accomplished, but the woman sank rapidly, and died in about two hours, without any external hæmorrhage, although the peritoneal cavity was found, on dissection, to contain a large quantity of blood. Before the delivery a mass was felt in the vagina, which was supposed to be the placenta.

On the following day the organs were removed. The polypus was of a flattened, pyriform shape, and arose from the posterior parietes of the cervix, leaving about half an inch of the os tincæ below it. Before the dissection, it protruded six

inches, by measurement, from the external organs; after the removal of the parts, the form being, of course, very much altered, it measured six inches in length, four inches and three-fourths in width inferiorly, and two inches and three-fourths at the neck; thickness varied from about one-third of an inch to one inch and three-fourths. The inner surface of the uterus was continued over it to some extent, and, where this was torn, it was shown that the polypus consisted of a coarse, fibrous structure, in the form of irregular bundles, and held together by a loose, cellular tissue; numerous blood-vessels, which could be inflated with the blow pipe, were also seen in the substance, and upon the surface. It formed altogether a relaxed, fleshy mass, and, although described as fibrous, showed no appearances of having originated as a common fibrous tumor; there were, however, four or five small tumors of this nature about the fundus of the organ.

The laceration was two inches in length, oblique in its direction, and situated at the posterior part of the cervix, upon the left side; parietes of the organ apparently healthy, except for the polypus.

As to the malformation, it did not appear externally, but, within, the cavity of the fundus was found to be divided upon the median line by a septum, which extended downwards three inches, the entire length of the organ being about eleven inches. Cruveilhier figures a case (Liv. iv. pl. 5, fig. 5,) in which the septum extended down to the cervix, but without any appearance of division externally.

719. A very correct, and highly finished colored drawing of a ruptured uterus. The patient was a healthy Irish woman, twenty-seven years of age, and died in labor with her third child, three hours after the rupture was supposed to have occurred. The uterus itself was eleven inches and a half in length; the laceration was situated in the posterior parietes of the organ, towards the left side, and measured seven inches and a half; peritoneum stripped up extensively. The fœtus laid almost entirely in the peritoneal cavity, and the placenta was found near the stomach; there was also much effused blood in the cavity. The case occurred in the practice of Dr. Henry G. Clark, and the drawing was made for him by Mr. H. Billings. 1837.

720. A separation by sloughing of the whole inner portion of the uterus. The case occurred in the practice of Dr. James M. Whittemore, of Brighton, and the specimen was presented to the Society by Dr. Walter Channing, who gave at the same time a full history of the case.

The patient was twenty-five years of age, and was taken in labor with her first child on the 26th of February, 1847. On the 3d of March Dr. C. saw her in consultation. The pains had continued, and she had got but little sleep; abdomen exceedingly hard, and very large, the tumor being divided by a sulcus upon the median line. With great difficulty, from her weight, soreness, and inability to help herself, she was brought to the edge of the bed, and laid upon her left side. Upon examination, it appeared that the fœtus was still within the uterus, and in a state of putrefaction, being extremely flaccid, doubled upon itself, presenting by the left side of the trunk, and having in the left side of the chest a large opening, through which the organs of the thorax and abdomen protruded; the organs appeared as a large blackish mass, outside of the external organs, and had been down since 4, A. M. A constant discharge of most offensive flatus was passing from her before she was moved, but, during the examination, it came away in volumes. The child was extracted by the feet, and the placenta was removed with ease, there having been no hæmorrhage at any time.

Alarming collapse followed the delivery, but from this she soon rallied, under the use of stimulants, and was doing well until the 11th of March, when she began to complain of pain in the region of the bladder, and two or three days afterwards something was found to protrude from the vagina, which, in a letter to Dr. C., Dr. Whittemore described as "inflamed, livid, and very offensive;" on the 17th it came away, and, having been sent to Dr. C., it is now in the Society's Cabinet.

On examination of this mass it is seen to consist of a nearly perfect sac, its general form resembling that of an uncontracted uterus at the full period of gestation, and its length being about thirteen inches. It is generally from one to two lines in thickness, dark colored, and very flaccid, but sufficiently consistent to allow of a full examination, and showing this unequivocal evidence of its being a portion of the uterus itself, that upon

one of its surfaces are seen the extremities of vessels of considerable size. These vessels have all the appearance of uterine sinuses, and one of them is traceable to the extent of two inches, and nearly large enough to admit the tip of the little finger. Upon the other surface are several patches of some size of a soft substance, which may have been effused lymph. No appearance of an os tinæ.

About the close of March, or beginning of April, Dr. C. saw this patient again, and made another examination, but from the extreme soreness of the organs, the prostration, and the unwillingness of the patient to submit, the result was unsatisfactory. Posteriorly, the vagina was smooth, and natural to the feel; superiorly, it was entirely closed, so that no portion of the womb could be reached; anteriorly, a large rough surface was felt, from which the urine was passing in streams, and about which it was depositing an earthy concretion. The parts about the superior commissure, and the urethra seemed to be in a good condition, but the patient would not allow the introduction of a catheter for a full examination of the bladder.

On the 25th of June, Dr. Whittemore reported that the patient had gradually recovered her health, and had been, at that period, as well as usual for several weeks, and able to attend to her household affairs. The soreness, however, continued, and the discharge of urine was still involuntary, as it had been from the first, the organs being much excoriated.

721. Corpus luteum, from a woman who died after an abortion at about the fourth month. It is seven lines in diameter, and the yellow portion is from one to two and a half lines in thickness. The cavity is seen to be lined by a firm, smooth cyst, and was filled, when recent, with clear serum.

*Dr. J. B. S. Jackson.*

722. Ossa pubis, showing the relaxation which takes place during gestation; the specimen has been preserved in an open jar, so that it may be removed for examination. From a woman, twenty-eight years of age, who died of meningeal apoplexy at the full period of gestation, and before labor had commenced. Had previously had one child, and for about a month before her confinement, she had suffered from lameness about the

pelvis, which increased so much for the last eight or ten days, that she was obliged to support herself on going up stairs; recovered perfectly after her confinement, but the same lameness was again felt for about a month before her death. The bones could be moved so freely upon each other, after they had been sawed out, as almost to overlap, it being, however, a simple relaxation of the connecting fibro-cellular tissue, and without any redness, œdema, or any other mark of disease. The sacro-iliac synchondroses, also, could be moved very perceptibly.

A similar relaxation has been observed in several other cases which have occurred here, and not merely towards the close of pregnancy, but, to a certain degree, in the earlier months; the degree, however, varies in different subjects at the same period of gestation. 1839. *Dr. J. B. S. Jackson.*

723. The pelvis of a Guinea-pig, showing the separation of the bones that takes place so remarkably in this animal during gestation; a dried specimen. The ossa pubis are far apart, and, when recent, the sacro-iliac articulations were much relaxed. The animal died of acute disease some time before the end of gestation. May, 1846.

*Dr. J. B. S. Jackson.*

724. A specimen to show the development of the mammary gland, which takes place during gestation; it very nearly resembles the pancreas, at first sight. 1847. *Dr. J. B. S. Jackson.*

## II. PRODUCT OF CONCEPTION.

725-37. Fœtuses with the membranes, from the first to the fifth month, the smallest embryo being about the size of a pea. The external development of the fœtus, in these specimens, is well shown, and many points in the anatomy of the membranes, both healthy and morbid. An attempt has been made to designate the age of each, but this is only approximative, the history of most of the cases being unknown, and the development in several of them, having evidently been modified or arrested by disease. Most of the specimens have been cut open, but some of them are entire.

One only (No. 729) will be especially described, and this more particularly with reference to the uterus, which was also examined. The patient was an unmarried female, who took the oil of Tansy or of Hemlock at about the sixth week of pregnancy, and died in two hours, the case having occurred in the practice of Dr. Charles E. Ware. The uterus was four and a half inches in length, and contained within its cavity about half a drachm of reddish fluid. The decidua vera extended as far as the cervix, but did not close it; the blood-vessels and porous appearance were well marked, and it was evidently, as in No. 709, the inner surface of the organ itself, and not a new formation, the decidua reflexa being directly continuous, though very different in structure. The ovum was about one inch and a half in diameter, and was detached without difficulty, leaving a rough surface, and showing the existence of the decidua upon the corresponding inner surface of the uterus. A large space existed between the amnion and chorion, and was filled with a substance which resembled the vitreous humor of the eye. The umbilical vesicle adhered to the external surface of the amnion, near the root of the cord, and appeared in the form of a very delicate cyst about the size of a pea; one of its blood-vessels was quite distinct; the duct, however, was not to be seen, but, on a second examination, the specimen having in the mean time been in spirit, there was some appearance of a white line going off from the vesicle. The fœtus was about half an inch in length, and developed externally in proportion. The cavity of the corpus luteum contained about half a drachm of serum, and was lined with a soft, flocculent, infiltrated tissue, in which there was some effused blood.

In the preparation the umbilical vesicle is shown, with the fœtus and membranes. January, 1847.

Since the above, the same change has been observed in the inner surface of the uterus in another case, the blood-vessels being in some places of considerable size; the patient died from the effects of long continued vomiting, at about the third month of pregnancy.

738-43. Fœtuses without the membranes, from about the age of two and a half to six and a half months.

744. A fœtus affected with kirronosis, as described and figured by Lobstein, (*Répertoire général d'Anat. et de Physiol.* Vol. I. 1826.) The mother had borne several children, and this was her first miscarriage. She supposed herself to be in the fourth or fifth month of pregnancy, but the fœtus is much less developed than it should be at that period, the spine measuring only about two and a half inches in length. About a month before the abortion the abdomen subsided, the breasts became soft, and for the last three weeks there was a yellowish discharge from the vagina. The fœtus and placenta were expelled together, and appeared perfectly exsanguine, as if they had been macerated in spirit, but without any sign of putrefaction. The placenta and membranes were not otherwise remarkable, but the cord was observed at once to have a decided tinge of kirronosis, and the fœtus was therefore removed for examination. The cavities are fully exposed in the preparation, and the inner surface of the anterior abdominal parietes is seen to be of a deep, rich, yellow color; the membranes of the brain seem to be universally, and quite as deeply colored, the vault of the cranium having been removed upon each side; the pleuræ and pericardium are less generally affected, and in the spinal membranes the color is comparatively faint. There is nowhere any appearance of icterus. October, 1845. *Dr. J. B. S. Jackson.*

745. The posterior portion of the occipital bone, from a case of Cephalhæmatoma, which occurred in the practice of Dr. S. L. Abbott; a dried specimen. The mother had previously had several children, and one of them was affected with spina bifida. In the present case the labor was easy. The child was a healthy female, and the tumor was observed immediately after birth; it was then quite prominent, rounded, tense, fluctuating, and situated over the occiput. For the first two or three days the whole face, scalp, and upper extremities were of a deep red color, and the face was swollen to such a degree as to close the eyes. The prominence and tension of the tumor gradually diminished after the first day, and at the time of death it was flattened, diffused, and quite soft; the hard marginal ring was never observed. The child appeared to suffer no inconvenience from this affection, but it soon began to cough,

and died on the fourteenth day, with the symptoms of pneumonia.

On dissection the scalp was found healthy. Pericranium slightly ecchymosed over the right parietal bone, and over the upper half of the superior portion of the occiput it was entirely detached, the cavity thus formed between it and the bone containing two or three drachms of very dark, viscid blood, perfectly inodorous, without a trace of coagululum, and evidently effused some time before death. This cavity was limited mainly by the suture. The pericranium was extensively ossified toward the inferior margin, but was otherwise not remarkable. The outer surface of the bone was completely exposed, except for the thinnest pellicle of lymph, and was perfectly healthy; the corresponding inner surface, however, to the extent of nearly one inch, was elevated, porous, and quite vascular, the limits of this change being well defined, and the vascularity extending somewhat through to the outer surface; there was no appearance of caries, and the bone was otherwise healthy. The dura mater was very readily detached from this vascular portion of the bone, but the membrane was healthy and no effused blood was found. In the preparation the thickened, porous appearance of the bone is seen, and the ossified condition of the pericranium. 1847.

746. Placenta injected.

747. Uterus, showing a portion of placenta, about an inch in diameter, adhering to the fundus; the organ itself is about five inches in length, and otherwise not remarkable. From a patient of Dr. Anson Hooker, of East Cambridge; a woman, forty years of age, of delicate health, and somewhat subject to fainting. Labor natural, excepting that the placenta did not come away for an hour and a half, and it was then found that a portion had been retained. After her confinement she did better than usual, but there was more tenderness and enlargement of the uterine tumor, and towards the last the lochial discharge was rather foul. On the twelfth day after her confinement she was up and dressed, and expressed herself as quite well, but on the following morning, she rose to the close-stool, swooned several times, and died almost at once. Nothing

found, on dissection, to explain the suddenness of the death. 1837.

748. Retention of the placenta, causing an extensive destruction of the fundus of the uterus by sloughing. This case occurred in December, 1842, and was published, with remarks, in the *New England Quarterly Medical Journal* (p. 570.) The patient was twenty-one years of age, and was delivered of her first child on the 7th inst., at 5 o'clock, A. M., and after a labor of a few hours; child very small. The uterus contracted well, but, the placenta not being readily detached, an examination was made, and it was then found to be firmly adherent to the fundus of the organ. After waiting for several hours, an attempt was made by Dr. S. to remove it, but a small portion only was brought away, and in the evening a similar attempt was made by another practitioner, and with the same result. For the first three days there was nothing alarming in the symptoms, the patient, meanwhile, having taken one drachm of ergot, in divided doses, and a cathartic of castor oil; the lochia appeared, and continued to flow, the milk was secreted, and no pain nor other difficulty was complained of.

On the morning of the fourth day the pulse had risen from 84 to 140; the abdomen was tympanitic, and pressure upon it produced considerable uneasiness, while distinct pain was caused in the uterus by the application of external force; the lochia and milk had disappeared, the respiration was hurried, and the countenance distressed, it being evident that peritonitis had supervened. Dr. Channing, having seen the patient in consultation, examined the uterus, but could remove nothing; ten leeches were then applied over this organ, and a poultice to the remainder of the abdomen, and the injections of the chloride of soda, which had previously been used, were continued. In the afternoon she seemed relieved. At night a Dover's powder was given, and on the following morning she was decidedly better; the abdomen was less affected by pressure, and less swollen, the pulse had fallen to 100, and she had slept and perspired freely during the night; at noon she was still more relieved, but in the afternoon her pain gradually returned, and during the night it was mitigated only by opium. On the morning of the sixth day she was found in the greatest distress;

pain intense, tympanitis greatly increased, and respiration labored. During the whole forenoon the pains were intermittent, as in labor, and increased in their severity until they could scarcely be borne, but in the afternoon they suddenly ceased, and did not again return; the distention of the abdomen increased, the respiration became more labored, the pulse rose to 160, and in the evening she died.

Upon examining the body after death, the fundus of the uterus was found to have been destroyed, and projecting through it into the abdominal cavity, was seen a large portion of the placenta, the remainder still being contained within the cavity of the uterus; the body and neck of the organ were not disorganized. In the preparation the uterus has not been cut open, and the placenta is seen as above described.

*Dr. D. H. Storer.*

749. Extensive ossific deposit over the uterine surface of the placenta; from a patient of the late Dr. Charles T. Hildreth; a dried preparation. A second case occurred to Dr. H. about the same time, the patient, in both instances, having passed her full period, as she supposed. 1838.

750. Tumor in the placenta, two and a half inches in diameter, well defined, of a regular rounded form, situated two inches from the insertion of the cord, and connected with the outer surface of the chorion, being in fact buried in the substance of the placenta. Appeared, at first, white, opaque, and elastic, as if encysted, but, on being cut open, it is found to be uniform in its structure, and to resemble condensed cellular tissue; some blood-vessels in it, but nowhere any appearance of effused blood. The placenta was otherwise healthy, and the labor natural. 1839.

*Dr. Henry I. Bowditch.*

751. A blighted ovum. From a patient of Dr. J. Mason Warren; had had several children, and was not subject to miscarriage. The last catamenial period occurred in July. About the last of November she had some discharge of blood, but the abdomen continued to enlarge for two or three weeks afterwards, when it began to diminish in size, and on the 5th of February she called on Dr. W. to know whether she was pregnant or not; during the forenoon she was abroad for some time, and on the

following night had flowing, which returned on the 14th, when the ovum was discharged in a perfectly fresh state. It was about the size of a goose egg, and fleshy to the feel, the external surface being rough, and in part coarsely granulated, much of it seeming to consist of an opaque, white, fibrinous substance, the inner surface of the cavity having the usual botryoidal appearance. The amnion, chorion and decidua were quite distinct, the last having a dead, yellowish color; cord two and a half inches in length, small and much twisted. The fœtus was sufficiently plump, but exsanguine in appearance, and measured twenty lines from the vertex to the coccyx; extremities fixed permanently in an unnatural position, and terminated in a knobbed appendage, the fingers and toes not being formed,—most of the above appearances are shown in the preparation. February, 1845.

752. A blighted ovum, retained for several months, from a patient of Dr. John Homans; had previously had one miscarriage, and had carried one child to the full period; catamenia quite regular. In January, 1845, she menstruated for the last time, and there was no recurrence until after the first of the following December, on which day the ovum was discharged, with a moderate amount of pain and flowing. There was frequently, however, a slight, pale bloody discharge, lasting from about one to twenty-four hours, and in March there was a discharge which lasted for three or four days, consisting of liquid blood, with at first a small amount of coagulum; on this last occasion Dr. H. was sent for, but both he and the patient felt confident that no miscarriage had taken place. No bearing down during the above period. Swelling and soreness of the breasts commenced after cessation of catamenia, and continued throughout the summer, but disappeared before the ovum was discharged. There was also swelling with hardness of the abdomen, and this continued until the termination of the case, although less marked for the last few weeks. This enlargement was generally about as much as it usually is in the fourth or fifth month of pregnancy, but varied much at different times.

When first discharged the ovum had a bloodless, macerated look, as usual in cases of retention. On being distended, it is seen to be of a spherical form, and two inches in diameter.

The placental mass is perfectly defined, and equal in extent to about one-half of the whole ovum; greatest thickness three lines. The membranes were thin, but sufficiently firm, the amnion having its usual polish, and being readily separated from the chorion. No trace of a fœtus or cord. In the preparation the placenta has been cut through, and the cavity of the ovum is partially distended, so as to show many of the points above noted, but, when first discharged, the membranes were turned in so as to be in close contact with the placenta, and give to the whole mass the appearance of a cup-shaped cavity. From the outside of the chorion, near the placenta, there is seen hanging a tattered shred of decidua, upon which the characteristic porous appearance is still marked. 1845.

753. A large mass of uterine hydatids, there being some appearance of membranes, but nothing like the remains of a fœtus. The patient was fifty years of age, and had at the time a healthy living child, only two years old; menstruated regularly until three months before the mass was expelled; flowing for the last ten days, and for twenty-four hours to a considerable amount, and with much pain. Four days afterwards there came on a severe attack of puerperal mania, which lasted for three or four weeks. 1834. *Dr. J. B. S. Jackson.*

754. Uterine hydatids. The patient was an Irish woman, had had nine children, and supposed herself to be again pregnant, although some of the symptoms were wanting; the catamenia had ceased for three and a half months, but there had been occasionally slight bleeding from the uterus. Signs of miscarriage came on, and, after a dose of ergot, about half a wash-basin full of the "hydatids" were discharged; they were more or less connected by membrane, and in structure and variety of size and form corresponded to the description given by Cruveilhier (Liv. 1. pl. 1,) but nothing was seen like the remains of a fœtus. 1842. *Dr. Henry G. Clark.*

755. Umbilical cord about forty-five inches in length; passed twice round the child's neck. 1839. *Dr. Charles G. Putnam.*

756. A knot in the umbilical cord. 1840. *Dr. D. H. Storer.*

## XIII. MONSTROSITIES.

## I. MONSTROSITIES BY DEFICIENCY.

757. A lithographic drawing of a specimen which was presented to the Society by Dr. George C. Shattuck. This form of monstrosity has been described by M. Isod. Geoff. St. Hilaire (*Histoire des Anomalies*, vol. II. p. 469) as the acephalus, and the external appearances, in the present case, are well represented, and perfectly characteristic, the drawing having been made directly upon stone.

The mother of this subject was twenty years of age, and had been married three years. On the 25th of June, 1837, she was confined for the second time, being then in the seventh or eighth month of pregnancy; one well formed child had been expelled, when the monstrosity presented by the feet, and was withdrawn, the case being attended by Dr. Ward N. Boylston, then a pupil of Dr. S.

When received, it was quite fresh, weighed nearly four pounds, and measured from ten to eleven inches in length. The integuments were excessively œdematous, constituting by far the great bulk of the fœtus, and on the back and sides were found, on dissection, several large cysts. Superiorly, it terminated in a regular, rounded mass, and upon the median line, anteriorly, and not far from the above termination, there was the fleshy protuberance which is so often found in these cases. This protuberance, which represented the head, consisted of two portions, one above the other, and closely connected; the upper one was of a rounded form, and four or five lines in diameter, the lower one being considerably smaller, and terminating anteriorly in two points; the internal structure of this mass will be described in connection with the skeleton. In place of the upper extremities there appeared externally, upon the right side, two fingers, which looked not unlike the claw of a lobster; on the left side there was but a single finger. Both of the feet were turned in, and each had four toes, those on the right side being equi-distant, but those on the left irregular; otherwise, the lower extremities were well de-

veloped. The anus was imperforate; penis well developed; umbilical cord very small, and much shrivelled, but sufficiently long, and at its junction with the abdomen the intestines protruded, and were covered only by a delicate membrane.

On dissection, there were found in the abdomen the intestines, the left kidney, two renal capsules, the bladder, and the testicles, the greater part of the intestines being contained in the hernial sac. The stomach, liver, pancreas, spleen, and right kidney were wanting.

The small intestine (No. 761) was eleven inches in length, terminated bluntly in a cul de sac, and was nearly filled with a whitish, curdy substance. The large intestine was eight inches in length, and contained a white, crumbling substance at its upper part; the rectum was filled with mucus, and terminated in a cul de sac, except for a very minute opening into the urethra, just in front of the verumontanum. The kidney rested upon the front of the spine, or a little to the left of it, and was sufficiently well developed; renal capsule very small, and closely attached to its concave edge. On the right side, the renal capsule was much larger. Bladder, prostate gland, and testicles well developed. Vas deferens wanting upon the right side; upon the left, it was traced very nearly to its termination in the urethra, but the vesiculæ seminales could not be found.

The heart was entirely wanting. In the American Journ. of Med. Sciences for Feb. 1838, in which this case was published, there is a sketch of the external appearance of the fœtus, and also of the circulation, the course of which was as follows. The umbilical vein divided into two large branches soon after its entrance into the abdomen; one passed downwards to supply the pelvis and lower extremities; the other passed upwards on the right of the spine, and divided at the upper part of the thorax, to form the right and left subclavian and jugular veins; about the middle of the thorax a large branch was sent off on the right side, and which seemed to correspond to the vena azygos. The aorta divided, at the upper part of the thorax, into the right and left subclavian arteries, from which were sent off two small vessels, that, from their relation to the cervical vertebræ and to the cranial bones, were regarded as carotids, the corresponding veins being, of

course, regarded as the jugulars. The main trunk descended in front of the spine, or a little to the right of it, and gave off the intercostals; inferiorly, it terminated in the left umbilical and the left iliacs, which were distributed as usual; the iliacs and the umbilical artery upon the right side were perfectly distinct from those on the left. In front of the thorax, beneath where the sternum should have been, there was quite a network of vessels. The structure of the arteries and veins was apparently normal; the valves in these last, however, were probably wanting, as shown by the experiment of inflating the vessels when the abdomen was first opened. In the thorax was a quantity of condensed cellular membrane, and along the spine several large cells filled with serum, but nothing like a pleural cavity.

The spinal marrow was fully exposed by separating the wings of two of the dorsal vertebræ, and was found to be of the usual size, the nerves going off on each side. At its upper extremity it was still more satisfactorily shown; it there bulged slightly, and measured four lines transversely, then becoming smaller, and terminating in a blunt point, nerves being sent off from it to form the axillary plexus, which was large on each side. Within the thorax and abdomen were found several ganglia of the sympathetic nerve. Muscles of the trunk and lower extremities sufficiently developed, but elsewhere imperfect.

The skeleton (No. 759) having been prepared, and mounted, has been represented in Fig. 4, at the end of the volume. There are nineteen vertebræ, besides the sacral; three, situated above the upper rib, are partially united, and the bodies of two or three of the upper dorsal are irregularly ossified, but the rest are well developed. Nine ribs on the left side, and ten on the right; these last having hardly a trace of cartilage, but otherwise are not remarkable. The sternum is, of course, cartilaginous, but consists of two lateral portions, which are widely separated, except at the lower extremity, where they are closely approximated but do not unite; the portion which is upon the left side is attached to the clavicle, and to the cartilages of the ribs, but on the right to the clavicle only. There is a scapula on each side, sufficiently large, although not well formed, the right being the most perfect. The clavicles are

short, stout, and bent to somewhat of an angular form. The right upper extremity wants the humerus, but there is a slender bone, about an inch in length, which is evidently the ulna, and attached to this is a small cartilage, which may represent the head of the radius, these being directly attached to the scapula by ligament; the carpus exists, but the distinct parts were not made out. There are two metacarpal bones, about five lines in length; one is slender, and connected with the long finger above mentioned, and which has three well developed phalanges; the other is broad and stout, and bifurcates so as to connect with both fingers, of which the short one has two phalanges. The left upper extremity consisted of two, small, irregular cartilages, followed by a perfectly well developed metacarpal bone, and three phalanges. The pelvis and lower extremities are well formed, except that, as appeared externally, the feet are turned in, and have only four metatarsal bones and toes; one of the cuneiform bones, also, is misplaced, being set back behind the others.

Connected with the upper extremity of the spinal column is a row of eight small bones; they are altogether one inch in extent, and, for the most part, exceedingly irregular, but the terminal bone ends distinctly in an alveolus, in which are seen the well developed crowns of two incisor teeth, besides a smaller one, which is connected with one of them laterally.

This chain of cranial bones terminated in the external fleshy protuberance above mentioned, and the teeth were contained in a cavity in the lower point, probably the dental sac. The protuberance was generally fleshy to the feel, and had some dark hair about it. Between the upper and lower portions were two small openings, which led backwards into two distinct cavities, three-fourths of an inch in extent, large enough to admit a probe, and ending in a cul de sac, the inner surface being smooth and polished, except just within the openings, where it was thickened and rough; taken in connection with the bones about them, and especially with the teeth, these may fairly be called nasal cavities, the development being altogether very remarkable for this form of monstrosity.

758. Cast in plaster of the above monstrosity, taken, before the dissection, by Dr. O. W. Holmes.

759. Skeleton of the same.

760. Colored drawing, to show the course of the circulation from the same; the sketch in the Medical Journal, above quoted, having been taken from this, as that of the external appearances was from the lithographic drawing.

*Dr. Jeffries Wyman.*

761. Small intestine injected, to show the termination in a cul de sac; from the same.

762. A cast in plaster of a second acephalus; taken by Dr. O. W. Holmes. The specimen was brought from Salem by Dr. E. B. Peirson, in May, 1842, the case having occurred in the practice of Dr. Samuel Johnson. The mother was a mechanic's wife, and had previously had two well-formed children. Nothing remarkable was noticed in pregnancy, except her great size; labor took place at the sixth month, and was easy. There were twins, as usual in such cases, and the monster was born first, which, according to St. Hilaire, almost never happens. The second child was well-formed, but died in twelve hours; a large quantity of liquor amnii was discharged with this, but with the first none at all, so far as observed. Placenta single, the cord of the monstrosity being about six inches in length, and inserted near the edge.

Externally, this specimen resembled very nearly the one (No. 757) already described. The weight was four pounds and thirteen ounces, the length eleven inches, and the width, at the upper part, six inches. Integuments excessively œdematous, but there were no cysts, as in the last case. Feet turned in, and the toes imperfect, but the lower extremities were otherwise well developed. There was some vestige of the right hand, but only a pit upon the surface in the place of the left. A small, fleshy protuberance, as usual in these cases, represented the head, and around it was some appearance of hair. Immediately below this protuberance, and almost concealing it, was a remarkable development of pia mater; it formed a soft, dark red, circular, flattened, pedunculated mass, sixteen lines in diameter, and about three lines in thickness, the base being about eight lines; it was covered by serous

membrane alone, and consisted of a uniform, dark red, spongy tissue, such as is found upon the base of the cranium, in the common "acephalous fœtus." There was nothing between this mass and the cellular tissue which filled the cavity of the thorax, and there was no trace of cerebral substance. This formation is not mentioned by St. Hilaire, but Bécларd (Art. Monstruosité, Dict. des Sc. Med.) has described something of the kind.

On dissection, there was found no trace of heart, lungs, thymus gland, liver, spleen, pancreas, or diaphragm. The umbilical vein was fully injected from the trunk (No. 763), and showed no appearance of valves; it sent branches to the lower extremities, and to the abdomen; then ascended along the spine, and divided to supply the upper extremities and the neighboring parts; one large branch entered the spinal canal, upon the right side, between two of the lumbar vertebræ. There were two umbilical arteries, which were distributed as in the last case (No. 757), the left being connected with the aorta, which divided at the upper part of the spine like the vein, and at the lower part gave off the usual vessels to the pelvis, and to the left lower extremity; the umbilical artery upon the right side, and its branches, appeared to be distinct from those on the left.

The mode of circulation in these cases has never been satisfactorily determined, from the want of sufficient facts. Sir A. Cooper, however, has shown (Guy's Hosp. Reports, No. xi.) that in one case; at least, it must have been carried on through the monstrosity by the heart of the perfect fœtus, the placenta being single, as, according to St. Hilaire, it generally is, and the umbilical arteries of the two fœtuses communicating freely, so that the blood entered the monstrosity by these vessels, and was returned by the veins, contrary to its usual course. With regard to the absence of valves, in the present case, Sir. A. C. noticed the same fact in one, if not both, of the subjects which he dissected, and St. Hilaire mentions another case, being, as he says, the only one in which, so far as he knows, this point has been examined.

The large intestine was ten inches in length; small intestine fifteen inches, and ending in a cul de sac, there being two dilatations of the lower part of the ileum, from one of which arose a

marked diverticulum; anus open. There was a considerable quantity of nearly colorless mucus, with some white, curdy flakes, and in the small intestine some traces of a greenish color. The renal capsules were small, and united across the spine like a horse-shoe kidney. Left kidney large; measured thirteen by sixteen lines, and seemed to be distended with urine; right kidney five by nine lines. The bladder was rather small, but contained urine. The testicles, gubernacula, vasa deferentia, prostate, verumontanum and penis were sufficiently well.

The ganglia of the sympathetic nerve, and the filaments connecting them were unusually developed in the thorax, abdomen and pelvis; in the thorax were two ganglia which extended from the upper rib to about the eighth rib upon the right side, and to the sixth on the left. The spinal marrow was sufficiently developed, as were the intercostal nerves, and the nerves in the lower extremities. The right brachial nerve was rather large, and it was one of the most remarkable points in the whole anatomy, that although there was no trace upon the left side either of a clavicle or upper extremity, not even in the cartilaginous state, yet there was a very tolerably developed nerve, artery and vein running down in connection, in the situation and direction which the extremity would have taken if it had existed.

The skeleton, having been partially prepared, and preserved in that state, there were found to be eleven ribs on the left side and twelve on the right; all well formed, except the three first on the right side, which were fused anteriorly. The dorsal vertebræ corresponded to the ribs, the fourth being incomplete on the left side; cervical vertebræ about three in number, but not exactly determined, the wings being fused, although the transverse processes were tolerably distinct; ten vertebræ below the dorsal, of which five may be regarded as lumbar, and five as sacral; and below these last was a hard, thick, blunt cartilage, in place of a coccyx. The sternum was in two lateral portions, widely separated, sufficiently and about equally developed. The right upper extremity was about three inches in length; there was one metacarpal bone, with its phalanges well developed and ossified, and above these two irregular cartilages; upon the left side, as above stated, no clavicle, and no trace

of an upper extremity. Pelvis well formed. Lower extremities sufficiently developed, strongly rotated inwards, and the feet turned in; head of each femur quite prominent anteriorly, as if partially dislocated, and the synovial membrane seemed universally adherent. On the left foot there were four toes, the fourth metatarsal bone being cartilaginous and quite slender; six tarsal, the third cuneiform being wanting. On the right foot, on which there were three toes, there were two metatarsal bones well developed, and two which were very imperfect and cartilaginous; tarsal as on the left side.

763. Veins of the above monstrosity; injected, dissected out, and displayed upon a black board.

764. Intestinal canal, from the same case, and prepared like the veins.

765. A third specimen of acephalus, preserved entire in spirit. It is smaller than the two others, the length being from six to seven inches. The lower extremities are well developed, but the feet are much distorted, there being only two toes on the left, and three on the right. No trace of upper extremities. Sex female, anus not open. Hernia of intestine into the cord. Just above the cord, and rather to the left of the median line, is a very soft, fleshy, rounded protuberance, about one-third of an inch in diameter. Integuments very œdematous, as usual.

One well formed child was born, and afterwards the monstrosity, which presented by the feet. Quantity of liquor amnii large, there being a separate discharge for each fœtus. Placenta single; cord of the monstrosity slender, but that of the child was quite large. Labor occurred at the sixth month, and was otherwise natural; the child living a few hours only. 1842.

*Dr. M. S. Perry.*

766-74. Specimens illustrating one of the varieties of that form of monstrosity which is commonly known as the "Acephalous Fœtus." The specimens are so similar, that one general description may answer for the whole, and with these, have been incorporated notes of seven others which have also been observed, the cranial bones of several of them having been preserved in the Cabinet.

Externally, this variety of monstrosity is characterized as follows:—The trunk and extremities were well formed and fully developed; the vault of the cranium was wanting, and the base of the skull was covered by a deep red, smooth, but somewhat irregular, serous surface, this surface extending down the neck, sometimes as low as the middle of the back, and terminating in a point; on the margin of the integument, about the base of the cranium, was a narrow strip of hair; the neck was short, the ears rested on the shoulders, and turned forwards over the meatus, the face was directed upwards in proportion to the malformation of the neck, the mouth was open, and the prominent, staring, frog-like eyes were situated almost upon the top of the head.

On cutting through the arachnoid membrane, over the base of the cranium, for so it must be called, a coarse lace-work of vessels was found, consisting of pia mater, and very much congested; but, although the thickness of this vascular substance varied in different subjects, and still more in different parts of the same, there was nothing that could be called a tumor, as described by St. Hilaire (*Hist. des Anomalies*, vol. ii. p. 336.) In eight of the cases above referred to, there was no trace of brain; in one there was a doubtful trace, but in four there were distinct traces of cerebral substance in the pia mater.

St. H. remarks (vol. ii. p. 339) that his father and M. Serres discovered the pituitary gland in one case; in the above cases, I found, no less than six times, a rounded body about the size of that gland, and precisely in its situation, but although sometimes soft like brain, it more commonly had almost the fleshy consistence, as it had the color, of a lymphatic gland; and these were not all, for the same was also found three times in the other varieties of this form of monstrosity. The cerebral character of this body being then rather doubtful, it was excluded in speaking of the brain.

The spinal marrow terminated about where the serous surface began, but could sometimes be traced a little way upon the membranes, as a thin expansion; below this, whenever examined, it was found to be fully developed.

Of the nerves about the base of the cranium, the spinal accessory was generally seen after a little dissection, and some-

times at once; branches of the fifth pair were several times found, and in one case there was some appearance of the Casserian ganglion; the other nerves, when seen, were so involved in the cellulo-vascular tissue that they could not be traced to their foramina.

The internal organs of the thorax and abdomen, in ten of the cases which I examined myself, were well formed, with the following exceptions. The renal capsules, in every one, were very small, and in some they might readily have been dissected away with the fat which was found about the kidneys, as probably happened in some of the published cases, in which they are stated to have been wanting. The same general fact in these cases was noticed by Mr. Hewson (*Phil. Trans.* 1775), and seems now to be generally known, although I do not find that St. Hilaire refers to it. In one there was a supernumerary artery at the arch of the aorta; in another there was but one umbilical artery; in one the heart was malformed (No. 340), and in one the diaphragm was almost entirely wanting upon the right side, the liver encroaching upon the thorax, and the right lung being no larger than the upper lobe usually is. In one (No. 773) there were several peculiarities that will be noticed hereafter. In two, of which I did not see the dissection, the internal organs were well formed, except that the renal capsules were very small, and in one of the subjects one of them was not found.

The cranium was very remarkable in these cases, and the general form varied so little that one representation (Figure 5) will suffice for the whole. The frontal bones (*a. a.*) were very imperfectly developed in all, forming, as it were, a part of an irregular bony circle or ring; the nasal processes, however, were always quite large. In connection with these bones may be mentioned the extreme shallowness of the orbits, causing the eyes to protrude and appear large, as they are generally described, although, when dissected out, they were found to be no larger than usual. The parietals were wanting in every case, excepting one (No. 769), in which they existed in a very rudimentary state. The occipital bone was the most remarkable; the basilar and lateral portions were sufficiently developed, although not always well formed, and the last two were directed horizontally outwards, and sometimes even a little

downwards; the posterior portion, as seen in the figure, is divided into two equal portions (*b. b.*) which are of a very peculiar form, and are widely separated, so as to form on each side the lateral margin of the cranium. The petrous portion of the temporal bone was always large and quite prominent; passage for the carotid artery sufficiently large, but short and direct in its course, instead of being circuitous as usual; squamous portion very imperfectly developed, and situated rather beneath the cranium than upon its side; the ossicula were sufficiently developed, but the stapes was often more or less distorted. The great wings of the sphenoid bone are distinct from the body, in a fœtus at the term, whereas, in the above cases, the left wing was co-ossified in two, the right in three, and in five they were both united to the body of the bone; pterygoid processes quite large; small wings scarcely developed, having, in some cases, long slender spines, directed anteriorly, and in others being united posteriorly with the body of the bone, so as to make two distinct foramina behind the optic; these last, and those for the fifth pair of nerves were sufficiently developed. The two superior maxillary bones, which should be distinct, were co-ossified anteriorly in nine of the above cases, and in one of two cases, in which they were separate, the two inferior maxillary bones were co-ossified, this being the only instance in which this unusual condition was observed. The other bones of the head were not remarkable; the inferior maxillary is sometimes spoken of as larger than usual, but it only appears so from the deficiency of the cranial bones.

The malformation of the spine, which existed in all, was confined to the neck in some, but extended, in others, as low as the middle of the back, the wings of the vertebræ being widely separated, unequally developed, and often more or less co-ossified; the bodies, also, were very often irregularly developed. Some of the ribs were generally co-ossified when there was much malformation of the spine. Skeleton, otherwise, well formed. The osteology will be fully illustrated in the four following specimens, which are a part of those above described.

There are some other interesting circumstances in the history of these cases, which should not be omitted. With regard to the sex, five were males and eight were females. In seven

the birth was premature, and one only is stated to have been born at the full term. One presented by the arm, but the child was readily turned, and delivered by the feet; a second presented by the feet; a third, by the head, but the face was to the pubes; five by the head, and in these, and all of the others, the presentation must have been natural, or the contrary would have been stated; and a similar observation might be made in regard to many other points, all of the positive facts of any importance having been obtained, in nearly every case. Three were reported still born, and so, I am quite sure, they all were, or that they gasped but a few times at the most. A very curious fact, which was noticed in this, and in another variety of this form of monstrosity, and almost universally, was a profuse discharge of what has been regarded as the liquor amnii; it is recorded, however, only eight times in the first variety; Lallemand has observed the same fact in an analogous case, and attributed it to the dropsical affection which he supposed to have destroyed the brain and spinal marrow. In regard to previous births, one case was that of a first child, but in seven there had been other children, and, for the most part, a large number. St. Hilaire seems to attach much importance to the occurrence of some cause acting upon the mother, in the early months of pregnancy, and tending to produce the monstrosity (II. pp. 345 and 369;) in one of the above cases, the mother attributed it very decidedly to a severe fright; in four others, no cause could be assigned, and in the remainder the fact is not noticed.

766. A mounted skeleton of an "Acephalous Fœtus;" this is the specimen which is represented in Figure No. 5. 1839.  
*Dr. J. C. Hayden.*
767. A set of separated bones of the head and part of the spine, of an acephalous fœtus; mounted individually upon pedestals, and placed upon a black board. 1839. *Dr. J. D. Fisher.*
768. A second specimen, similar to the last, but showing also a fusion of the ribs. 1841. *Dr. George C. Shattuck.*
769. A third specimen; in this there are two rudimentary and very

irregular bones, that are connected with the frontal, and probably represent the parietal bones. 1842.

*Dr. William E. Townsend.*

770. Drawings, showing the external appearances of an acephalous fœtus. Two of them represent in outline a front and side view of the head and shoulders, and the third gives a back view of the whole in India ink, the head being shaded. They were taken by a professed artist, for Dr. Charles T. Hildreth, and, being admirably well done, might be copied here, if this form of monstrosity were not sufficiently well known; the only representations, however, that I have seen of it are two wretched figures, one in St. Hilaire's work (*Hist. des Anom.*) and the other in a Memoir by V. Portal (*Annales des Sciences Nat.* vol. xiii.).
771. Cranium of the monstrosity, from which the above drawings were taken; prepared by Dr. C. T. Hildreth. The skeleton has also been preserved, but, being in an imperfect state, it has not been mounted with the cranium; it, however, shows an extensive fusion of the ribs, and separation of the wings of the vertebræ as low as the eighth dorsal. 1835.
772. A fœtus preserved in spirit, and showing the full development and plump condition so often noticed in these cases. Dissected by Dr. Joseph W. McKean. 1828.
773. A fœtus preserved in spirit, and which had been in spirit for some time when it was dissected. The case, which is interesting from the malformation of the internal organs, and from the circumstances of its birth, occurred in the practice of Dr. Ezra Palmer, Jr., and an account of it was published by him in the *Medical Magazine* for December, 1833.
- The deficiency of the vertebræ extended to about opposite the lower angles of the scapulæ, the brain being nearly wanting. Left upper and right lower extremities imperfectly developed; feet turned in, as in varus. Something like a penis was seen, about one-third of an inch in length, and having the appearance of an urethra, which terminated almost at once in a cul de sac, but there was no prepuce nor scrotum, neither

did the anus exist, nor the sulcus between the nates. Otherwise the fœtus externally was well formed.

The abdomen was much distended, and, when the specimen was fresh, there was supposed to be ascites; the peritoneal cavity, however, on being opened, was found to contain a few ounces only of a reddish brown fluid. The urinary bladder was as large as a common-sized orange, considerably thickened, and filled about one-third of the cavity of the abdomen, the urethra being pervious to the extent of about two-thirds of an inch. Kidneys and renal capsules small, but the ureters were tortuous, and very much dilated. The large intestine opened into the upper back part of the bladder, and upon its left side, being, for the last two inches, distended with mœcium. At the fundus of the bladder, and connected intimately with its parietes, were the rudiments of a uterus; these consisted of three cavities, one of them about two-thirds of an inch in diameter, and the other two about half as large, the largest being situated immediately upon the right side of the intestine, and the two others close to it, but upon the other side; they were about a line in thickness, rugous upon the inner surface, and opened freely into the cavity of the bladder, two of them by distinct openings, and the third indirectly through one of the others; from each side there was sent off a prolongation, or horn, which terminated in a short Fallopiian tube, and beneath which was a well developed ovary. The other organs of the abdomen were well formed, and have been removed, except the large intestine; the thoracic organs were also well formed. In the preparation, the anterior parietes of the abdomen and of the urinary bladder having been cut away, there are seen the openings from the intestine and from the uterine cavities into the bladder, the appendages of the uterus, and the dilated ureters, these last being injected.

This fœtus was born in company with two others, which were well formed; the first, a male, weighed seven pounds, and did well; the second, the subject of the present case, weighed five pounds, and gasped only a few times after it was expelled; the third, a female, weighed six pounds, and lived for ten hours. The two first presented by the breech, but the presentation of the third was natural. They were contained in separate cavities, and the placenta, which was single, weighed two pounds.

The mother was a respectable, middle aged woman, and had four children previously to her confinement with the triplets. 1835.

774. Cast in plaster of the head of an acephalous fœtus, taken by Dr. Morrill Wyman, of Cambridge. The child was born at six o'clock, A. M., on the 25th of August, 1843, and died in the course of the forenoon of the 30th, having lived more than five days. During this time it appeared very feeble, and in the most miserable state possible; it, however, opened its eyes, moved its lips, protruded the tongue to the edge of the lips, and took liquids from a sop, but would not suck. It also moved the limbs. It was small, but externally well formed, except for a reddish mass, which exuded serous fluid, and was situated about midway between the eyes and the occiput. The case occurred in the practice of Dr. T. Wellington, of West Cambridge.

775. The cranium of an acephalous fœtus, which differed from all of those above described (p. 246,) in having the spine entire throughout, and in having the posterior portion of the occipital bone only partially divided, as shown in Figure 6. The parietal bones were wanting, and the cranium was otherwise formed as in the above cases, excepting that it was more elongated than usual.

Externally, the fœtus was well developed, and well formed, excepting the head; the neck being sufficiently long, the ears were not bent forwards as in the other cases; weight five and a half pounds; sex male; born at the full period, and presented by the lower extremities, which moved when they were first felt in the vagina, though the child never breathed; quantity of liquor amnii very great. The mother had previously had six or seven children, and assigned no cause for the monstrosity.

Upon the base of the cranium was an irregular, dark red mass, nearly as large as an English walnut, one rounded, pedunculated body hanging down over the left eye; on dissection, this consisted of a coarse, reticulated structure, with some large blood-vessels, and numerous, small, serous cysts, but without a trace of cerebral substance. The spinal marrow

terminated just above the base of the skull, in four little rounded eminences, and was, at the same time, rather enlarged. Renal capsules exceedingly small, but the internal organs were otherwise well formed. 1838. *Dr. George Bartlett.*

776-81. The next six specimens belong to another variety of the "Acephalous Fœtus," which resembles the one already described (p. 246,) in its general characters, but differs from it much in the degree of malformation; the spine is open throughout, and is often incurvated so as to add very much to the external deformity; there are also more frequently than in the first variety other malformations, both external and internal; the cranium, however, remains about the same, although there is more development of brain.

776. A mounted skeleton, being the first specimen in this series. The spine was perfectly straight, except at the upper lumbar vertebra, where there was a slight anterior curvature, but this is not now to be seen; all of the vertebræ are well developed, except the wings of the third cervical, which are quite small; the wings of the dorsal vertebræ, also, not being so widely open as usual in this form of monstrosity. Otherwise the skeleton is well formed, excepting the head, as externally, the subject was well formed, except for the head and spine.

A trace of brain only existed, if any at all, but, in the situation of the pituitary gland, there was found a soft, rounded, reddish mass, in this case, and in No. 778; there was some appearance, also, of a thin and superficial layer of medullary substance in place of the spinal marrow; and the same has been sometimes observed in other similar cases; spinal nerves and ganglia well developed, as they usually are in these cases. The internal organs were well formed, except for the small size of the renal capsules, and a fissure of the uvula; this last was also observed in Nos. 781 and 783, and twice in the first variety of the acephalous fœtus (p. 246,) the soft palate being otherwise well developed.

This case occurred in November, 1844; the mother was a young married woman, and this was her first child; no accident during pregnancy; considered herself as in the sixth month when labor came on, without any obvious cause; breech

presentation; child still born; quantity of liquor amnii large.

*Dr. Benjamin E. Cotting*, of Roxbury.

777. A mounted skeleton; the second specimen in this series (p. 254.) Cranium as in the first variety (p. 246,) except that there are two long, slender bones, finely serrated on their edges, closely connected with the frontals, and which may perhaps be rudimentary parietal bones; the same have been figured in the case of No. 781, and also by Lallemand, in his case above referred to (*Observations Pathologiques*, 1825.)

The cervical portion of the spine is bent directly downwards and backwards, so that the upper dorsal vertebra forms the proper summit of the spinal column, and, in the recent specimen, the posterior edge of the base of the cranium was united by fibrous substance to the wings of the sixth dorsal vertebra; wings of the cervical and dorsal vertebræ extensively co-ossified. Skeleton otherwise well formed.

When recent, a large and somewhat lobulated mass of cerebral substance was found, and there was some appearance of spinal marrow. The specimen was then put in spirit, and after some time was taken out and hastily examined; the internal organs were well formed, except for the renal capsules, which were not found; the entire absence of these organs is so contrary to what has been generally observed, that I think there must have been an oversight in this case, the examination having been made under very unfavorable circumstances. When recent, this fœtus weighed one pound and a quarter; sex female; discharge of liquor amnii very great. 1838.

*Dr. Charles Wild*, of Brookline.

778. A mounted skeleton; the third specimen in this series (p. 254.) Cranium as in the last specimen, except that there is but one so called rudimentary parietal bone, and that is quite small and attached to the left frontal bone. The spine is nearly doubled upon itself, the middle dorsal vertebræ projecting forwards, and the upper lumbar backwards; there is also a considerable lateral distortion. The wings of the cervical and dorsal vertebræ are unequally developed, and extensively fused, especially upon the right side; the bodies also are very irregular. Of the ribs, there are eleven upon the left side, and these are

distinct ; on the right, there are ten or eleven, and nearly all of them are fused.

Externally, this fœtus was more deformed and much smaller than those already described, weighing scarcely twelve ounces (avoird.) In consequence of the strong curvature of the spine, the trunk was much shortened, and the projection of the lumbar vertebræ was very conspicuous. The parietes of the abdomen were deficient upon the left side, and the liver and intestines protruded, forming a large tumor, and covered only by a thin membrane, which was continuous with the integuments. The right hand was strongly flexed, and turned so that its cubital edge came in contact with that of the fore-arm, as shown in the skeleton ; the left foot was, also, strongly bent outwards.

On dissection, no trace of cerebral substance was found, excepting the pituitary body ; no cysts in the pia mater ; spinal nerves and ganglia distinct, with some appearance of spinal marrow, the parts being considerably injured in the delivery, as they often are.

Internally, the diaphragm was wanting. Liver fawn-colored, and the umbilical vein entered on the convexity of the organ, there being no division into lobes ; spleen, kidneys, bladder, uterus, ovaries, and vagina well formed. Renal capsules rather larger than usual in the acephalous fœtus, and not connected with the kidneys, but rather above them and towards the median line. The arch of the aorta gave off the right subclavian and carotid only ; the pulmonary artery gave off the usual branch to each lung, and then divided into two main branches, one being the ductus arteriosus, and the other, after running some way upwards, dividing into the left subclavian and carotid arteries ; the other vessels, and the heart, externally, were well formed, as were also the lungs.

The mother of this subject was a young woman, and had had one miscarriage, but had never carried a child to the full term. Considered herself as in the seventh month of pregnancy, when the child was born ; the liquor amnii had been coming away for three weeks, and in considerable quantity, the discharge being profuse towards the last ; back of the child presented, and thus it came into the world. The placenta was reported by Dr. S. as large, and made up almost entirely of serous cysts ; cord exceedingly short. In the course of her

pregnancy, the mother sent for Dr. S., in consequence of her anxiety from what her friends had said, that her child would resemble a certain dog, to which she was much attached, and which had been used to draw her breasts after the previous miscarriage. This child was born on the 30th of October, 1840, and on the 1st of December, 1841, she was again delivered of another very similar monstrosity, (No. 780.)

*Dr. Asa B. Snow.*

779. This specimen, the fourth of this series (p. 254,) is preserved entire, in spirit, and is interesting in connection with the last, as it resembled it perfectly in size, and its general outline, and in the projection formed by the lumbar vertebræ. There is also the same deficiencies of protrusion of the parietes of the abdomen, with a protrusion of the contents, the only difference being that, in the present case, it is upon the right side, whereas in the other it was on the left; sex male.

*Dr. Charles Walker.*

780. Separated bones of an entire skeleton, the spine only being preserved as a single piece; mounted on pedestals, and displayed upon a black-board; the fifth specimen of this series. The right wing of the sphenoid is fused with the body of the bone. The spine, which is represented in Figure 8, is four inches in length, and nearly straight, open throughout, of course, but otherwise well developed below the lower dorsal vertebra. The wings are mostly small, and more or less fused as low as the sixth dorsal vertebra, on the left side, and rather lower down, on the right. The bodies of the corresponding vertebræ are generally very irregularly developed; most of the cervical, with the two upper dorsal, are fused into one mass, and bifid; the two lateral halves being separated so as to leave an opening of considerable size (*a.*), although much less than in the next case. Upon the body of the eleventh dorsal vertebra, posteriorly, is seen what appears to be the wing of a vertebra (*b.*), inclining to the right side, and resting immediately upon a small bone, which may be a misplaced and undeveloped body. Of the ribs, there are nine upon the left side, and eleven on the right; many of them are fused, and some are very imperfectly developed. Extremities well developed.

This child was born on the 1st of December, 1841, and the most remarkable circumstance in the case was, that, thirteen months previously, the mother had been delivered of a similar monstrosity (No. 778.) Labor occurred at the eighth month, and the presentation was natural; weight of the child two pounds and nine ounces. She subsequently had two other, well formed children, one at the full period, and one prematurely; and about a fortnight after the last, in February, 1845, died of acute nephritis.

*Dr. Asa B. Snow.*

781. The cranium and trunk of the sixth specimen in this series (p. 254;) represented in Figure 9; the extremities, being well formed, have been removed. The head is inclined to the right side, and carried backwards so that the occiput is closely connected with the wing of the sixth dorsal vertebra upon the left side, and with the eighth on the right. The rudimentary parietal bones (*a. a.*) exist, as in No. 777, and there is a considerable separation between the palatine bones, extending somewhat to the upper maxillaries, and connected with a fissure which was observed in the soft palate.

The spinal column is remarkably malformed. A front view of this part of the skeleton has been represented in Figure 10, and an idea may be given of it, by supposing that there had been a longitudinal fissure through the bodies of the vertebræ, from the first cervical to the eighth dorsal, and that the two lateral portions had then been so widely separated as to result, not merely in a coming together, but in an actual fusion of the cervical bodies with the dorsal of the same side; the fusion being more marked posteriorly than in the front view. The lateral portions do not, however, come perfectly together, but there remains a central opening (*a.*), about three lines in diameter, and surrounded on all sides by the bodies of the vertebræ. Upon the left side the third cervical is in contact with the seventh dorsal (*b.*), and on the right side, the second, third, fourth, and fifth cervical are fused into a common mass with the eighth dorsal (*c.*) As to the number of the bodies, there are in the neck, on the left side, six, distinct from each other, and regularly arranged, the last two being fused with the bodies of the dorsal vertebræ; on the right side are seven, much more irregular, and of which four are fused, as above stated.

The body of the first upper dorsal vertebra, on the left side, exists; the two next are wanting; the four next are distinct, and of some size, and two of them certainly are fused with the bodies of the cervical vertebræ; the eighth and ninth form a common large mass, bounding the central opening inferiorly. On the right side, the bodies of the dorsal vertebræ are much more irregular; the first four or five are almost entirely wanting; the sixth and seventh are of some size, but are fused with the cervical, and the eighth is fused with four of the cervical, as above stated. The bodies of the last three dorsal vertebræ, and of the five lumbar, are well developed, there being, however, a slight lateral curvature. Most of the wings of the cervical vertebræ are fused, and many of the dorsal, especially on the right side. There are twelve pairs of ribs, which are, for the most part, closely compressed, as usual in these cases; three of the lowest are fused on the right side, and on the left, they are generally flattened, but otherwise well developed.

This case occurred in December, 1844. The mother had previously had two well formed children, and considered herself as in the sixth month of pregnancy, when, without any obvious cause, labor came on; breech presentation; child still born; sex female; quantity of liquor amnii very large. The deformity of the trunk was very considerable, but the extremities were well developed. Upon the base of the skull were some traces of brain, and, in place of the spinal marrow, a layer of medullary substance, thin, but of some width, and covered, if at all, by the most delicate membrane; nerves and ganglia well developed, as usual in these cases.

Internally, the diaphragm was pushed very high into the thorax, the lungs being imperfectly developed. Pericardium mostly wanting, so that the heart and lungs laid, as it were, in one common cavity; the heart being well formed. The mesentery, also, was quite imperfect, appearing more or less perforated and tattered, although much of it was entire. A fissure was found through the centre of the uvula, and extending somewhat into the soft palate, the bones being separated, as already shown. Œsophagus quite short. The stomach, which, with a portion of the intestine, has been injected (No. 782,) was, perhaps, sufficiently large, but of a very irregular form;

the right extremity terminating in a cul de sac, and the intestine arising at a considerable distance from it. The liver was considerably fissured, and the umbilical vein entered upon the convex face; gall-bladder and ducts apparently well, but the intestine, wherever examined, contained only a light colored, pasty mucus, and without a trace of bile. Renal capsules exceedingly small. The kidneys were united by their lower extremities, across the spine, the two pelves being proved, by inflation, to be separate. The other organs were well formed.

*Dr. Anson Hooker, of East Cambridge.*

782. Malformed stomach, from the above case.

783-88. In the four next cases, constituting the third variety of the "Acephalous Fœtus," the spine is open throughout, and much incurvated, as in the last group. The brain, however, is considerably developed, and the form of the cranium is much altered, in regard to the existence of the parietal bones, and a consequent change in the posterior portion of the occiput.

783. Cranium and trunk prepared, and mounted. This is the first specimen in the present series, and has been represented in Figures 10 and 11. The head being thrown very far backwards, and the upper half of the spine much bent upon itself, the posterior portion of the occipital bone is closely connected with the wings of the ninth, tenth, and eleventh dorsal vertebræ; this portion of the occiput consists of two broad, flattened bones (*a. a.*), wanting the prolongation which usually extends forwards to the frontal, as the parietals (*b. b.*) exist in this case; these last, however, are in a very undeveloped state. The basilar portion of the occiput is large, as also the lateral portions; the right being fused with the temporal bone. The petrous portion of the temporals is very irregular, the cranium being otherwise formed as usual in these cases. The cervical, and upper half of the dorsal vertebræ, are bent strongly backwards (Figure 11;) the lower dorsal forwards; and, below these, the spine is straight, there being the usual number of vertebræ, unless one may be wanting in the neck. The bodies of the cervical consist mainly of two broad lateral portions; the two upper dorsal are irregular and fused; the fifth is very

imperfect, but all of the other bodies are well developed. The wings of the cervical are mostly fused; the seven or eight upper dorsal are small and crowded, although distinct, and the rest are fully developed. The ribs are normal, except for a partial fusion of the tenth and eleventh, upon the right side. Extremities well formed, and have been removed in the preparation.

The fœtus weighed, when recent, three pounds and six ounces (avoird.) and was quite fat; neck most completely wanting, in consequence of the curvature of the spine. A mass of brain existed, equal to more than an inch in diameter, and at its base were several nerves. The spinal marrow existed, although less developed than in the next case. The parietes of the abdomen were deficient about the umbilicus, and a tumor, from which the cord arose, was formed there, two inches in extent, and covered by a transparent membrane. The liver was large, and sent off a considerable lobe between the two others, to form the protrusion at the umbilicus. The heart was malformed, and has been already described (No. 341.) Each of the lungs consisted of a single lobe, which was deeply fissured at the base. There was also fissure of the uvula. Renal capsules exceedingly small; right hypogastric artery wanting. The other organs were well formed, as were the extremities.

Labor came on at eight and a half months; the child presented by the feet, and was still born; sex female; quantity of liquor amnii very large. The mother was a respectable woman, and attributed the monstrosity to a fright which she had received when six weeks pregnant; had had three other children, and all well formed. 1845.

*Dr. Milton Fuller, of Medford.*

784. Cranium and trunk prepared, and mounted. This is the second specimen of the present series, and is represented in Figure 12. The spine is so strongly bent upon itself, as to bring the occipital bone in close connection with the two last dorsal vertebræ. The parietal bones (*a. a.*) are developed very much as in No. 787, and extend transversely across the base of the cranium, upon which they are depressed, and with which, to a certain extent, they come in contact, the right being rather the

largest ; their external surface is quite concave, and the suture between them runs obliquely towards the right side. The posterior portions of the occipital bone (*b. b.*) are connected with the parietals, and pretty well developed, so as nearly to meet from the two sides ; superior edge quite dentated, the inferior being thicker and smooth ; on the right side it is fused with the lateral portion, and with the temporal bone. The frontal bones (*c. c.*) are considerably developed, but strongly depressed upon the base of the cranium. The bodies of the vertebræ, in the cervical portion, consist of five or six pieces irregularly developed ; two or three of the upper dorsal are also irregular, as well as the sixth, but the rest are sufficiently well. The cervical wings are imperfect, and mostly fused ; those on the right side forming one mass with the first six dorsal ; the six upper dorsal, on the left side, are also fused, but not with the cervical ; otherwise the wings are well developed. On the left side there are eleven ribs, which are not remarkable except for a fusion, to a small extent, between the fourth and fifth ; on the right side, there are twelve, but they are pretty extensively fused.

The subject of this case was a first child, and born of respectable parents. Labor came on in the night, at the seventh month ; and the child was born half an hour before Dr. D. arrived ; quantity of liquor amnii large. The heart was seen to beat about thirty times in a minute, for nearly two hours after the birth, but without any other sign of life. Sex female.

A mass of brain was found, equal to  $\frac{3}{4}$ ij, or more, and divided upon the median line, almost equally ; the right lobe being again subdivided ; something like a ventricle was also found upon the left side, and at the base were several nerves.

The spinal marrow appeared as a thin, flattened ribband of distinct medullary substance, of a reddish color, and, as observed in some other cases, divided into two lateral portions.

The parietes of the trunk were extensively deficient ; the liver, stomach and intestines, spleen, heart, and left lung protruding. The placenta, which was born with the child, was not remarkable. The cord was but five inches in length, and sent off a duplicature of the amnion, from half an inch to one inch in width, which was expanded over the organs, and could be stripped up nearly to the surrounding integument. Other-

wise the fœtus was well formed externally, except for a varus of the left foot.

On dissection, a thin, dense, fibro-cellular membrane was found to invest the protruded organs, when the amnion was raised, the muscles, of course, being wanting. The heart was fully and regularly developed, some elongation only being observed of the vessels, which were put upon the stretch by the unnatural position of the organ; pericardium well. In the right cavity of the thorax there was nothing very remarkable. Upon the left side there was no pleural cavity, and nothing in place of the lung but a coarse cellular tissue; the lung itself appeared just beneath the transparent membranes, not unlike a thin muscular expansion, the bronchus being small in proportion to the undeveloped condition of the organ. The liver was somewhat irregularly developed; ascending colon situated in the middle of the abdomen, as in the earlier months; the renal capsules were larger than usual in such cases, and the left hypogastric artery was wanting, the organs being otherwise well formed. 1845.

*Dr. Henry Dyer.*

785. A colored drawing of a monstrosity, an account of which was published by the late Dr. Charles T. Hildreth, in the Medical Magazine for July, 1834. The third specimen in this series (p. 254.) This drawing was made by a professed artist, and was afterwards engraved on copper, and published with the case; engravings being also made of the skeleton. The whole was done at the expense of Dr. H., and, the plates having been preserved, have been used for the present work. The case is particularly mentioned by St. Hilaire (Hist. des Anom. II. 313,) and the drawing of the monstrosity has been represented in one of his plates.

The external appearances of the fœtus are so well represented in Figure No. 13, as to render a general description unnecessary. The weight was three pounds and one ounce, and the length thirteen inches. Sex female.

The brain rested upon the expanded dorsal and lumbar vertebræ, and upon the integument which covered the depressed cranial bones, sending a prolongation, however, beneath these last. After dissection, it was carefully collected, and found to weigh three ounces. It was divided into two equal hemi-

spheres, and imperfectly into convolutions, the arachnoid membrane being continuous about the base with the common integument. The whole mass was very soft, and of a dusky red color, from congestion, and effused blood; there being in each hemisphere a cavity which was filled with coagula. No other parts of the brain were recognized, and no connection was traced between this mass and any of the nerves, either cerebral or spinal.

The spinal marrow was wanting, and, the spinal column being open throughout, the nerves terminated, as usual, in the membrane upon its posterior face. A very small bundle of nervous fibres was seen passing down over five or six of the processes upon the left side, and a few of the cranial nerves were found, among which, it was thought, was the par vagum. Nerves of the trunk and extremities well developed.

The internal organs were well formed, except for the kidneys; these were united across the spine (No. 787,) and the left was not more than half as large as the right; upon the right side were two ureters, which were distinct throughout; renal capsules sufficiently developed. There was also but one umbilical artery. The development of the renal capsules is interesting as an exception to the general law, and it should be observed, that, in the last case, these organs were larger than usual in the "acephalous fœtus."

The history of this case was as follows: The mother was a married woman, thirty-five years of age, of excitable temperament, and had previously had two well formed children. In the present case, the motions of the child were not felt until about the end of the fifth month, and were always feeble and peculiar. The uterine tumor was uniformly tense, and, towards the end of the seventh month, increased very rapidly, so as to fill the epigastrium, and cause a very painful distention. December 20th, being called hastily, in the night, to attend a sick child, she felt a remarkable subsidence of the tumor, the change in her form being very apparent; this was soon followed by paroxysms of pain in the right hip, with vomiting and constipation, which continued more or less for five or six days, but were relieved after free evacuations, although the sense of painful distention continued. On the 9th of January, whilst walking across the room, she had a slight uterine pain,

and, suddenly, a most profuse discharge of liquor amnii; slight pains continued through the day, and with them considerable discharges of water; but, in a day or two, she was about again, and much more comfortable than before; slight motions of the child being still occasionally felt. On the 15th of January labor came on, and was accomplished with very little pain; the child was born alive, but completely enveloped in the membranes, the mother having felt its motions for fifteen or twenty minutes after it was expelled. On the arrival of Dr. H., half an hour afterwards, the lower extremities were still in the vagina, and, from its position, the child had probably descended with the face to the pubes. 1834.

*Dr. Charles T. Hildreth.*

786. Skeleton of the specimen above described, and of which a back and a side view are represented in Figures 14 and 15. The head is bent strongly backwards, and there is also a lateral inclination of the head and spine. The frontal and parietal bones (*a. a.* and *b. b.*) are much more developed than in any of the preceding specimens, but are depressed towards the base of the cranium; posteriorly, or rather inferiorly, however, there is a broad, open cavity, which readily admits the ends of three fingers. The basilar and lateral portions of the occiput are sufficiently developed, but the basilar has a peculiar hexagonal form, and the lateral portions are seen to encroach much upon the petrous portion of the temporal bones. The posterior portion of the occiput consists of two bones (*c. c.*), one upon each side, of a somewhat rhomboidal form, and tolerably developed; that upon the right side is curved upon itself, and forms a part of the cranial cavity, a small portion of it only, above the curve, being seen in Figure 15; the one upon the opposite side is rather behind or below the cavity, but they both serve to connect the parietal bones with the spinous processes of the dorsal vertebræ. There is also another distinct bone, which is marked *c.*, and may perhaps be considered as a part of the occiput; it is a long and narrow bone, situated behind the right parietal and posterior occipital; resting, like the occiput, upon the extremity of the spinous processes of the vertebræ, and forming, with the left parietal, the posterior edge of the cranial cavity. The other bones of

the head are not particularly remarkable; palatines not separated, as in some of the cases.

The spinal column, as before stated, is open throughout; otherwise, the vertebræ are well developed, from below upwards to the twelfth dorsal. Above this, the bodies are well developed as high as the sixth dorsal, above which they become more and more irregular. The dorsal wings, on the right side, are generally well, except for a fusion of the first two; upon the left side, the last six are sufficiently well, although less regular than those on the right, but above these are four others which are fused and much compressed, in consequence of the curvature of the spine towards that side; upon the ninth is a distinct bone, marked *k.* in the figure, and which appears not unlike a rudimentary wing; something of the same kind having been observed in No. 780. The cervical vertebræ are very irregular; the bodies consist, for the most part, of two lateral rows of small bones; the first pair of wings are small and distinct, but below these are four others which are fused together, and with the dorsal, those upon the left side being shown (*l.*) in Figure 14.

The ribs upon the right side are of the usual number, and fully developed; the second, third, and fourth, however, are fused at their angles, and the eleventh becomes very broad near its anterior extremity, as seen in the figure. On the left side, the twelfth only is normal; the first is quite small, and between this and the next is a large, open space, the ribs below this being much compressed, fused, and irregularly developed; as to the number, there may be one or two wanting, but this is doubtful. The pelvis and extremities are well developed.

787. Kidneys and renal capsules from the above case (p. 264.)

788. Head and trunk of the fourth and last specimen in this series (p. 254); the deformity is excessive, as is shown in Figure No. 16. The occipital bones are united with the spinous processes as far down as the first lumbar vertebra, except upon the left side, where there is a deficiency to a considerable extent between the lateral portion of the occiput and the spine; the antero-posterior curvature of the spine is very strong, the

upper dorsal and the middle lumbar vertebræ forming the prominent points, and, as a consequence, the pelvis and the anterior extremities of the ribs are brought into close contact. The cranial cavity is quite capacious. The frontal bones (*a.*) are fully as large as in the last specimen, and the parietals (*b.*) are considerably larger and convex outwardly, there being a considerable space between the frontals and the base of the skull. The basilar and lateral portions of the occiput are well developed; the posterior portion (*c.*) consists upon each side of one piece, the one upon the left being more rectangular, but the one upon the opposite side sending out a long and slender portion which is connected, as in the preceding cases, with the parietal bone, and forms the posterior boundary of the cranial cavity. Orbital cavities deep, as a consequence of the development of the frontal bones; upper maxillaries not co-ossified; the palatine fossa being deep and narrow, and the palatine bones themselves small.

The spinal column has some lateral distortion, besides the strong curvature above reported; the wings of the first cervical vertebra separate; otherwise, the wings of all of the cervical vertebræ, of which there are six or seven, and of the first seven dorsal, upon the left side, are co-ossified, except for two linear divisions; upon the right side, the cervical and first dorsal wings, and below these two or three others are co-ossified, the wings of the other vertebræ being separate. An additional wing is seen, resting upon the wings of the second and third lumbar vertebræ upon the left side, and, upon the same side, the wings of two or three of the upper sacral vertebræ have produced a growth of bone, which extends, as one continuous piece, to about the median line, and forms, thus far, something like a spinal canal. There is also seen a very anomalous bone, larger and thicker than the wing of a vertebra, besides differing from one in form; it is attached at one extremity, by fibrous substance, to the back of the first lumbar vertebra, and at the other, to the inner surface of the posterior portion of the occipital bone, upon the right side, thus forming an arch over a portion of the spinal column. The cervical portion of the spine is of considerable length, broad and flattened. Some obliquity of coccyx, but pelvis otherwise well.

Thorax exceedingly prominent. The sternum is fully de-

veloped, but the anterior half has no connection with the ribs, and appears perfectly naked. Upon the right side there are seven ribs; the cartilage of the first joins the sternum about midway; the second, third, and fourth are fused posteriorly, and the cartilage of the second is to a certain extent wanting; the fifth, sixth and seventh are also fused posteriorly, and, instead of terminating as usual, send out a broad, thin, but strong expansion of bone, which stretches, like a diaphragm, across the front of the spine, and even to some distance beyond it upon the left side, where it is connected again with the body of the vertebra, and appears as one of the ribs. The above remarkable appearance has been represented in Figure 17. Upon the left side, there are twelve ribs, including the one which is fused with, or which is sent off from those upon the opposite side, this being the tenth in order; the first two are disconnected with the sternum, as in birds; a rudimentary cartilage, however, being sent off as if to meet the second; the first is very small; from the third to the eighth, inclusive, the ribs are well developed; the ninth and eleventh are broad and flattened; the eleventh having a slender attachment, which connects it, near its head, with the front of the body of the vertebra, midway; the twelfth is normal.

The extremities, being well formed, except for the club-feet, have been removed.

Externally, this fœtus was quite fleshy, and would probably have weighed four or five pounds. Deformity very great, the neck being absolutely wanting, and the upper extremities apparently much elongated; circumference about thorax fourteen inches; both feet affected with varus, as so often happens where the nervous centres are imperfectly developed. The frontal and parietal bones evidently existed, but were much depressed, and covered by scalp and hair; the brain appeared, with a quantity of deep red vascular tissue, and formed a mass about the size of an English walnut, the deficiency of the spine appearing below. About this deficiency, was an appearance of cicatrization, the cuticle being continued, to some extent, beyond the limits of the cutis; this appearance is usually seen, to a greater or less extent, and the cuticle has often been separated from the subjacent parts by maceration.

On dissection, a mass of brain was removed from the cra-

nial cavity, equal in bulk, by estimate, to  $\text{z}ijss.$ ; convolutions distinct; one portion was firmer than the rest, and showed some appearance of a pons, and medulla oblongata. Upon the bodies of the lumbar, and a few of the dorsal vertebræ, there were seen two large parallel nervous cords, which became united at the lower extremity, and, upon raising up the brain, there was seen beneath it a thin expansion of medullary substance, which was probably connected with the cords just mentioned; nerves and ganglia distinct, as usual.

In the roof of the mouth there was the very deceptive appearance, which is so often seen in these cases, as of a fissure through the palate; the uvula, however, was divided upon the median line; thymus gland quite large; lungs irregularly fissured; alimentary canal well, except that the cæcum and ascending colon were found in the middle of the abdomen; liver large, and irregularly divided.

The kidneys were in the usual situation, and separate, but rather small, and seemed to be made up of thin and delicate cysts, apparently containing a thin liquid, and being about a line in diameter (No. 789.) The right ureter was of some size and firmness, from the bladder upwards, to about the brim of the pelvis; and the left ureter was in the same condition, nearly to the kidneys; they then became abruptly so small and filiform, that they could scarcely be traced, and continued without any further change as far as the kidneys. Bladder small. The renal capsules were as large, in proportion to the size of the kidneys, as in a well formed fœtus, but were broadly and intimately united across the spine, like a horse-shoe kidney (No. 789.) The same condition was found in No. 762. St. Hilaire (I. 543) quotes a case of fusion of the testicles, kidneys, and renal capsules, and remarks that there is no other case of this last on record. The other organs were well formed.

This case occurred in the practice of Dr. S. W. Drew. The mother was a respectable woman, and this was her first child. When about two and a half months pregnant, she attended an operation upon the eye, when she became very faint and remained so for some time. Labor occurred at eight and a half months, and was short; liquor amnii discharged before Dr. D. arrived, but nothing was said of the amount; head pre-

sented, and the child lived about half an hour. Sex female. 1847.

789-95. The four next cases may be grouped together as a fourth and last variety of the "Acephalus Fœtus." The spine is entire, except in the first, in which the deficiency may be considered as an accidental complication; the cranial cavity is closed posteriorly by the occiput, and the parietals exist, but there is very little appearance of brain, and the same was observed in a similar case, which was dissected some years since. Superiorly, the cranial cavity is, of course, open, and, in most of the cases, largely so.

789. An entire skeleton, being the first specimen in this series. The posterior portion of the occiput consists of a single piece, that extends from side to side, and rises perpendicularly from the spine, the upper edge being thick, smooth, and rounded, and the lower edge deeply notched upon the median line. As a rudimentary parietal, there is, upon the right side, a long, narrow, flattened bone, reaching from the frontal to the occipital, and depressed upon the base of the skull, there being nothing of the kind upon the other side. The frontal bones are not much more developed than in the first variety of this form of monstrosity. Otherwise, the cranium is not remarkable, except for the vertical direction of the base of the skull posteriorly.

The spine is perfect in its cervical portion, but below this it is open throughout. The wings of the two last dorsal, and first lumbar vertebræ are fused, and the body of the tenth dorsal is imperfect, so as to cause a considerable lateral curvature. From the bodies of the second and third lumbar vertebræ, posteriorly, there arises a mass of bone, apparently formed by the fusion of three or four rudimentary wings, uniting with the proper wings upon the left side, and forming the passage for a large nerve that went to the sciatic. Sacrum very imperfect; three distinct wings upon the right side, and two on the left, these last being fused; at its lower extremity, anteriorly, is an anomalous bone, about one line in diameter, and extending transversely from side to side. Coccyx entirely wanting.

The pelvis is well formed, in itself, but the antero-posterior

diameter is much elongated, and it seems to be attached to the front of the sacrum rather than to the sides. Ribs well formed, and of the usual number, except upon the left side, where the last two are wanting, and the tenth becomes abruptly widened, about midway, as in Figure 15.

Externally, this fœtus was well formed, except for the head and back; neck not shortened, and the ears inclined but little forwards. Weight two pounds and two ounces. Upon the base of the skull was a prominent, irregular, lobulated mass of pia mater, equal to an inch or more in diameter, and containing a few serous cysts, but no trace of brain. The spinal marrow was somewhat enlarged just at its termination, and gave origin to the portio dura and mollis, and to the par vagum; the fifth pair of nerves, with its Casserian ganglion, and the spinal accessory were also distinct. In the neck, the spinal marrow seemed to be perfectly developed, but below this, it was altogether wanting; a cavity, however, was found, as usual, on cutting through the membranes, and the nerves were seen going off upon each side, one large branch passing through the adventitious passage in the lumbar region, as above stated. Internal organs well formed, except for the small size of the renal capsules (No. 792,) and a small diverticulum from the intestine (No. 791.)

The mother was a young married woman, and this was her first child. Labor natural; head presented; quantity of liquor amnii very great. The child gasped for about five hours after it was born, and bled freely from the head and back, but showed no other signs of life. Sex male. 1838.

*Dr. George Hayward.*

790. Two drawings of the above specimen, as it appeared in the recent state; a back and side view. *Dr. Jeffries Wyman.*

791. A diverticulum, from the above case.

792. Kidney and renal capsule, from the same.

793. A mounted cranium, represented in Figure 18, and forming the second specimen in this series. The posterior portion of the occipital bone (*a.*) consists of a single, thick, solid piece of

bone, extending across from side to side, and rising perpendicularly from the spine, the upper edge being smooth, rounded, and almost eburnated; it is firmly anchylosed to the lateral portions, and, in part, apparently, to the temporal bones. The frontal and parietal bones (*b.* and *c.*) are very considerably developed, but depressed entirely down upon the base of the cranium; upper surface of the parietals concave. The opening in the vault of the cranium, formed by the occipital and two parietal bones, is not far from the size and form of the thumbnail; posteriorly, the whole base of the cranium is inclined upon the portion that is anterior to it, so as to come into a vertical position, the basilar and posterior portions of the occiput being parallel to each other, as remarked by St. Hilaire (II. 322.) in a form of monstrosity, which, in some respects, resembled the present case; this appearance was observed in three cases, at least, of the present series.

The fœtus was sent to Dr. C. from the country. It lived nine hours after it was born, and weighed seven pounds and a half. Sex female.

In the recent state, the top of the cranium was flattened from the orbits backwards, but was covered by integument and brain, except towards the back part, where it was deficient to the extent of two-thirds of an inch or more. From this part, there projected or hung off two or three soft, dark red masses, having a serous surface, one being about as large as the top of the finger, and the others much smaller, the integument stopping abruptly about their base. Just behind the large mass there was seen a small opening which led in the direction of the spinal cavity, but this was not traced. On cutting through these masses, they were found to consist of a dark red, flaccid, œdematous, apparently cellular tissue, containing a serous cyst, about the size of a pea, but no trace of brain; on removing this tissue, however, from between the vault and base of the cranium, a small mass of cerebral substance was found, and which was apparently in the situation of the pituitary gland. The spinal marrow terminated in an expansion in the membranes, between the basilar and posterior portions of the occipital bone, the nerves being sent off on each side. Otherwise the fœtus was well formed, externally and internally, except for the small size of the renal capsules.

1842.

*Dr. Walter Channing.*

794. The cranial bones, in this specimen, have been separated by maceration, mounted separately upon pedestals, and placed in a small glass case ; the third in the present series.

The posterior portion of the occipital bone is seen to consist of two broad pieces, which are deficient, so as in the recent state to greatly enlarge the foramen magnum, although superiorly they nearly met. The upper edge of these two bones is thin, rough, and inclined forwards ; the surface posteriorly is somewhat convex, and they are strongly anchylosed both with the lateral portions of the occiput and with the temporal bones ; differing much, then, from the last two specimens. The lateral portions are distinguished by their outward direction, and large foramina ; and the basilar, by its unusual breadth.

The frontal bones are very considerably developed, as in the last case, and partially anchylosed, the orbital and frontal portions being almost compressed into one broad flat piece. The parietals consist, as in the same specimen, of two, broad, flat, irregular bones, which were depressed so as nearly to touch the base of the cranium ; upper face concave. Large wings of the sphenoid bone co-ossified with the body, and very imperfectly and irregularly developed ; foramina large ; body large, and terminates, in front of the small wings, in a strong point. The squamous portion of the temporal bones is larger than in the first form of the "acephalous fœtus" (p. 249,) and the carotid foramen is long and circuitous, but otherwise, there is no marked difference ; ring large, irregular, and co-ossified. The lower maxillary bone is rather short, but stout ; posteriorly, it is broad and flaring ; anteriorly, it is pointed, and the two portions are strongly co-ossified. There is one anomalous bone, of a triangular form, and equal to about five lines in extent, but this was not seen until after the bones had been separated by maceration. St. Hilaire remarks (II. 302) upon the very compact and almost eburnated condition of many of the bones, and especially of the occipital, in a certain form of monstrosity, to which, osteologically, the present specimen and the last seem to be allied, and in both of which, this structure, in nearly all of the larger bones, is strongly marked. The form of monstrosity referred to, however, is characterized, according to St. Hilaire, by a pedunculated brain, resting upon

the depressed vault of the cranium, apparently somewhat developed, and covered, for the most part, by integument; whereas, in these two cases, the quantity of cerebral substance was very small, and it was covered only by serous membrane. The cervical vertebræ have been preserved, the wings being irregularly developed, and somewhat fused; the two upper ribs of each side are also seen to be fused.

The subject of this case, which occurred in the practice of the late Dr. Henry G. Wiley, was an illegitimate child; and this was the only instance of the kind that was observed in all of the cases of "acephalous fœtus" that are here referred to, so far as was ascertained. With regard to another point, the mother was said to have carried her child ten months; and St. Hilaire refers to a similar occurrence in a form of monstrosity to which the present case is nearly allied (II. 346.) Weight nearly six pounds. Sex female. Top of head quite flat, even with the brows, and covered by integument, on which was some hair. On the back part, and about over the occipital foramen, was a dark red mass, covered by serous membrane, about one inch and a quarter in diameter, and consisting partly of cerebral substance. All of the joints of the lower extremities were more or less distorted, and also the hands; the fingers being strongly flexed, and the points bent permanently backwards. Internal organs well formed, except for the small size of the renal capsules, and for the existence of two ureters upon the left side. 1842.

795. A mounted cranium; the fourth and last case in this series. The frontal bones are not much more developed than in No. 789, and are more irregular than in any other specimen. The parietals, also, are represented by two very irregular little bones, from three to four lines in length, and situated behind the frontals. The posterior portion of the occipital bone consists of two broad pieces, which meet upon the median line, and slightly overlap, except inferiorly, where there is some deficiency; upper edge arched forwards, as in the last case, and somewhat eburnated; not co-ossified with the lateral portions, nor with the temporal bones; the basilar portion is almost parallel with the posterior, as above stated (p. 272.)

The mastoid portion of the temporal bone is imperfectly de-

veloped, and the three pieces of the sphenoid are co-ossified, as are also the two superior maxillary bones. The spine was entire throughout, and the skeleton was otherwise well formed.

The child, in this case, was fully developed, and would probably have weighed seven pounds. Born at the full period, before Dr. W.'s arrival, and lived ten hours. Sex male. The mother had had several well formed children, and attributed the malformation, in the present case, to a very direct and strong moral impression, the explanation being given since her delivery. The tumor upon the top of the head was about the size of an English walnut, and somewhat flattened, the arachnoid being apparently covered by a very delicate membrane, which resembled the cuticle, as seen about the base of the tumor, and when detached by putrefaction. The tumor consisted almost entirely of serous cysts, from two to six lines in diameter, and connected, as usual, by a greatly congested celulo-vascular tissue, and at the base there was some appearance of an arachnoid cavity. One mass of rather doubtful cerebral substance was found, about five lines in diameter, and two and a half lines in thickness, of a greyish color, ecchymosed, and having almost the consistence of a lymphatic gland. The spinal marrow terminated just above the foramen magnum, in a broad, thin expansion. Internally, the renal capsules were quite small, the kidneys large, and each of the ureters formed two separate ducts for some distance after leaving the organs; in the uvula there was also the trace of a division along the median line. Otherwise, the organs were well formed, the thymus gland appearing rather large, as it often does. In the stomach were six or eight distinct ulcerations, from half a line to a line in diameter, and with some appearances of inflammation; this being the only case in which anything like acute disease was found in the internal organs. 1845. *Dr. Abner B. Wheeler.*

796. Spina bifida; a wet preparation. The malformation reached, externally, from the sacral into the dorsal region, and measured three inches and one-fourth. Integuments immediately about it cicatrized, as in the "acephalous fœtus." Surface at first rather depressed, but before death considerably



elevated by the effusion which took place ; it was also excoriated from the time of birth, and discharged a thin, purulent matter. On cutting through the membranes, the cavity beneath was found in a state of intense inflammation, as shown by the effusion of serum, and a large quantity of recent lymph. This last being removed, the spinal marrow was seen terminating, as usual in these cases, where the malformation commenced, and adhering to the inner surface of the cavity ; below this, the nerves went off from the membranes upon each side ; the anterior and posterior branches, and the ganglia connected with these last, being perfectly distinct, and of full size, as shown in the preparation. Upon each side there was another cavity, which was apparently distinct from the first, but in the same state of inflammation.

The subject of this case was a twin-child, and otherwise well formed, except for a strong eversion of the right foot ; the other child was well formed, but had died, apparently, before labor began ; both were males. Frequent and ineffectual attempts were made to induce motion in the lower extremities ; urine and fæces discharged about once in two days, and it was never observed to make any expulsive effort. Much distressed on the first night, but was afterwards kept constantly under the influence of paregoric, and it died, without any material change of symptoms, on the tenth day.

Inflammation of the membranes, as a cause of death in these cases, is described and figured by Cruveilhier (*Anat. Path.*), and the same has been several times observed here. In one case, the lymph not merely invested the whole spinal marrow, and extended to the base of the brain, but the brain itself was completely and very peculiarly disorganized ; and, throughout the spinal marrow, there was the appearance of a central canal, which was filled with thick yellow pus. 1839.

*Dr. James B. Gregerson.*

797. A dry preparation, to show the condition of the bones, in a case of spina bifida. The wings of the last three lumbar vertebræ, as well as the sacral, are separated from each other, though, individually, they are seen to be fully developed. When recent, there existed, at this part, a soft, red tumor, two inches in diameter, the edges projecting over the base ; this

ruptured probably at the time of birth, and, so long as the child lived, discharged abundantly, the surface having, to some extent, an opaque, and somewhat sloughing appearance. Internally, the sac was highly inflamed, as in the last case, and, above this, there was an imperfect cavity in which the spinal marrow was seen to terminate, the nerves being connected, as usual, with the membranes.

This was also a male child; otherwise well formed, and lived about two weeks. Had a perfect use of the lower extremities, and seemed to be doing well until the eighth day, when there came on convulsions of the head and upper extremities, which recurred very frequently, and were constantly becoming worse as long as it lived. The lower extremities were not convulsed, but, when the change occurred, became paralyzed, and there was some rigid contraction of the muscles of the feet and toes, the system generally becoming affected.

*Dr. Z. B. Adams.*

798. A second specimen, similar to the last. The subject of this case was a first child, and hydrocephalic; presented by the feet, and was still-born. Sex female. Labor occurred at eight, or eight and a half months; quantity of liquor amnii very large. The head was eighteen inches in circumference, and the ventricles of the brain were large in proportion; cranial bones widely separated, with some perforations through their substance.

The preparation shows an open condition of the spinal canal, from the eighth dorsal vertebra downwards, the bodies and wings of the vertebræ being in no way remarkable, except for a fusion of the wings of the seventh and eighth upon the right side. In the recent state, the corresponding part of the surface of the back presented the usual appearance, being depressed rather than otherwise; membranes thickened towards the median line, and gave origin, as it were, to the nerves, both branches of which, with their ganglia, were of full size; no distinct appearance of medullary substance; cavity not inflamed. 1847.

*Dr. Stephen Ball.*

799. Spina bifida in a boy, sixteen years of age; the spinal marrow terminating at the fourth dorsal vertebra; the spine was

removed as low down as the sacrum, and has been prepared to show the condition of the bones. At birth, there was observed a small tumor in the middle of the back, the surface having much the appearance of an old cicatrix, and below this, in the lumbar region, was an "ulcer" about half as large as the hand; paralysis complete below the ribs. Nursed as well as any child, and appeared to enjoy perfect health, the "ulcer" discharging for about six months, and then healing entirely. Generally quite costive, and the fæces were passed involuntarily. Urine also discharged involuntarily; always perfectly limpid, without sediment or odor, and, until a short time before death, much more copious than natural; the character of the excretion being very different from what is generally observed in cases of paraplegia. Appetite generally good, and he was not troubled with indigestion. When he was between thirteen and fourteen years old, hair appeared upon the pubes, but he never showed any sexual propensities, so far as could be ascertained. The tumor, in the middle of the back, was exceedingly tender, but in the ulcer there never appeared to be the least sensibility, not even on the application of caustics. Right leg often œdematous, but the left never; both were always of a natural temperature, and not liable to become cold. Mind active; upper half of the body unaffected. About two years before his death, the ulcer in the lumbar region broke out again, and he gradually sank under the profuse discharge which took place from the surface.

On dissection, the surface of the tumor over the middle of the back appeared as if cicatrized; beneath this was a coarse, white, cellular tissue, which contained no fat, like the surrounding integuments, and beneath this a serous cavity, formed by the expansion of the spinal membranes, and partly filled with serum. The wings of the dorsal vertebræ, from the fourth to the ninth, inclusive, were separated so that, midway, the little finger could be passed freely about within the cavity, at the upper extremity of which the spinal marrow was distinctly felt to terminate in the membranes posteriorly, as usual in spina bifida, and from this point downwards it was satisfactorily ascertained that the spinal marrow did not exist. Below this fissure the spinal canal was again completed by the union of the wings of the two next vertebræ, those of the last dorsal

and first lumbar being also closely approximated. The four last lumbar and first sacral were open posteriorly, the wings upon the right side being very imperfectly developed, and partly fused, whilst those on the left side could hardly be said to exist; the foramina for the nerves, however, were sufficiently large. Throughout the lumbar region there was found, in the situation of the spinal cavity, a coarse, white, cellular tissue, surrounded, for the most part, by a firm membrane, which appeared to be an extension of the dura mater, and upon this last, the nerves appeared to terminate. The wings of the dorsal vertebræ, from the third downwards, were extensively fused, the last being also very irregular; bodies of the fifth, seventh and eighth formed throughout in two lateral portions. The spine, at the dorsal region, was strongly bent towards the right side, the bodies of the vertebræ at that part being narrower on that side than on the other. There was also a disease of the first two lumbar vertebræ, about one-half of the bodies of these bones having been destroyed by caries, with their intervertebral substance; some new bone was thrown out upon them anteriorly, and a very considerable quantity of the same upon most of the rudimentary wings of the lumbar vertebræ upon the left side, this new bone lying immediately beneath the ulcerated surface, so as to be covered by little more than the granulations.

The thoracic and abdominal organs appeared sufficiently healthy; the liver was rather large and of a pale fawn color, but the lungs were not tuberculous. 1836.

*Dr. Asa B. Snow.*

800. Cast in plaster of the nates and lower part of the back, showing the size and form of the tumor, in a case of spina bifida, which may be compared with the following dissected specimen. The patient is a bright, healthy-looking little girl, four years of age; walked as early as other children, and is disposed to play, but soon becomes tired, and often falls, the lower extremities being turned much inwards, and deficient, to a certain extent, in the power of motion; the urine and fæces are often discharged involuntarily, the bowels being always costive. The tumor is of a regular rounded form, like a female breast, about as large as the fist, and situated over the very lower part

of the spine ; it is perfectly covered by cutis and integument, and resembles to the feel, not an encysted, but rather a common fatty tumor, so that excision has often been suggested ; upon the surface there is nothing remarkable, excepting a minute, warty-looking body, and some appearance, as of a small nævus ; the separation of the wings of the sacrum is not distinctly felt. The tumor, which was small at the time of birth, has grown rather faster in proportion than the child itself. January 27th, 1845. *Dr. Charles E. Ware.*

801. A specimen which is preserved in spirit, and shows the condition of the parts in a case similar to the last. The tumor was rather towards the left side, about three inches in diameter, fleshy to the feel, and covered by integument, with a small nævus upon the surface, as in the other case. On dissection, it was found to consist mainly of fat, but near the surface was a cavity of some size, formed by an expansion of the spinal membranes, and in which the spinal marrow itself terminated, about half an inch within the sac. The wings of the sacral vertebræ are separated, excepting perhaps the first, and upon the left side two or three are fused into a separate mass of considerable size, and are connected with the ilium and ischium. The bodies of the same vertebræ are also irregularly developed, and upon the left side there is quite a deficiency of bone, leaving a circumscribed cavity, at the bottom of which the theca is seen, and the nerves arising, as it were, from it.

The patient was a male child, fourteen months old, always feeble, and subject to diarrhœa, under which it at last sank, October 10th, 1843. The power of motion in the lower extremities was imperfect, so that it could never stand alone, and there was a want of control of the sphincters of the rectum and bladder. The tumor was congenital, and grew with the child, and the case was particularly interesting in connection with the one last described, as the two patients lived for a time in the same neighborhood, and were observed together.

*Dr. Henry G. Wiley.*

802. The trunk and lower extremities of a malformed, seven months fœtus. When recent, a large, rounded, uniform, encysted tumor was situated over the sacrum, and apparently

just ready to burst; it was formed by common integument, and so far differed from the ordinary cases of spina bifida. On being laid open, it was found to contain  $\frac{3}{4}$ x of serum, though far from being distended, and was lined by a smooth, polished, and highly vascular membrane. Through an opening, one-fourth of an inch in diameter, there protruded a small portion of spinal marrow, which adhered to the inner surface of the sac, and may still be seen in the preparation; this continuation of the spinal marrow in substance into the lower part of the canal, and below where the cauda equina usually forms, has been observed in certain cases of spina bifida since the time of Morgagni. The external organs of generation and the anus were wanting. Both feet turned inwards, and the left also upwards. Otherwise, the fœtus was well formed externally. On examination of the internal organs, the uterus was found to be of some size, but the cavity terminated below in a cul de sac, and the vagina was wanting; left Fallopian tube and ovary normal. The right Fallopian tube and ovary, also, seemed to be well developed, but the tube, instead of uniting with the uterus, took the course of the round ligament, and was lost towards the groin. The kidneys were entirely wanting, but the renal capsules were of full size, and in their proper place; so, in a specimen that was exhibited to the Society by Dr. Samuel Parkman, one of the kidneys was wanting, but the renal capsules were equally and fully developed; and in a case that was observed by Dr. Lewis, at his dissecting-room, the left kidney was situated in the cavity of the pelvis, but the renal capsule was in its usual place. The bladder, of course, was very small, but communicated with the rectum by a capillary opening, as in the cases of imperforate anus, above described (p. 129.) All of the above points, excepting the last, are shown in the preparation; the rectum is also seen, much distended, the rest of the intestine being cut away. Gall-bladder wanting, the ducts being traced directly from the liver into the intestine. The liver itself, and the other abdominal organs were well formed, and have been removed. In the thorax there was nothing remarkable excepting a deep yellow stain upon the external surface of the ventricles of the heart; this was another instance of kirronosis, of which so marked a case has already been recorded (No. 744.) 1836.

803. A mounted cranium, in which there is seen, near the centre of the posterior portion of the occipital bone, an oval, defined opening, about two lines in diameter, and extending quite through the bone; there is also a considerable deficiency of the frontal bones, commencing at the anterior fontanelle, and terminating rather abruptly some way above the orbits. The subject was a female child, born rather prematurely, and lived but a few hours. Upon the back of the head was a soft tumor, about the size of a large filbert, sufficiently defined, but flattened, and covered by healthy integument; on incision, there was found a small cavity within, lined by a delicate, vascular, serous membrane, which seemed to penetrate the opening in the occiput, and to be connected within the cranium, but this last point was not examined. Otherwise, the child was well formed externally and internally. 1846.

*Dr. John Homans.*

804. A mounted cranium, showing a deficiency in the occiput, and upper part of the spine. The child was born with a cyst attached to the back of the head, covered by integument, and nearly as large as the head itself. The cyst presented in the delivery, and, as it caused some delay, it was burst, and discharged a considerable quantity of bloody serum. Labor occurred at six and a half months, and the child lived four days and a half. During this time it appeared very feeble, and only one attempt was made to give it nourishment, this causing much distress; there were frequent but slight convulsions from the time of birth, and, towards the last, the hands were strongly and rigidly flexed. The cyst contracted much in size after the child was born, and became dark and quite offensive.

On dissection, the inner surface of the cyst appeared to be lined by a serous membrane, and was of a dark red color. Through the deficiency in the occiput, which was at once observed, the brain protruded somewhat, and was covered by its proper membranes, and by the dura mater, and, having been carefully removed, it seemed pretty certain that the cerebellum was wanting, and the pons Varolii very imperfectly developed. The organs of the thorax and abdomen were well formed. Sex male.

The cranium is generally well formed, but some of the

bones are imperfectly developed. The anterior fontanelle is large, the frontal bones considerably separated, and in several places the bone is very thin, or even not yet formed. This is more remarkable along the upper and back part of the parietals, and also along their inferior border, large and irregular deficiencies in the bone being there supplied by membrane; towards the vertex, and along the sutures, the fibres, which shoot out from the edge of the bone, are very marked, but about the membranous patches the edges of the bone are defined. The place of the bone is also supplied by membrane, upon each side, between the temporal and the occipital bones, and also at the base of the skull, between the petrous portion of the temporal and the sphenoid. The deficiency in the occipital bone, above referred to, enlarges, as it were, the foramen magnum, measuring three-fourths of an inch transversely, and an inch and two-thirds antero-posteriorly, from the junction of the basilar with the spine, the opening posteriorly being well defined, and of a regular, oval form. The separation of the lateral portions of the occiput is just equal to the width of the deficiency in the posterior, so that the regular form of the opening is preserved. Otherwise, the cranium is well formed. Several of the cervical vertebræ having been prepared, in connection with the cranium, the wings of three or four of them are seen to be separated so as to enlarge the opening in the occiput, and there is one wing more upon the right side than on the left, causing a lateral inclination which was as marked in the recent state as it is now; most of the bodies also are imperfectly or irregularly developed. 1846.

*Dr. Z. B. Adams.*

805. A mounted cranium, in which the upper back part of the skull is largely open and greatly malformed. The posterior portion of the occiput consists of two parts, one behind the other, and there is a second large foramen, with several, small, irregular bones about it, which suggest the idea of a second occipital bone. Otherwise, the cranium is well formed, except that the vault is altogether larger than usual.

When recent, there existed upon the back of the head a very large tumor, formed by a protrusion of the scalp, and lined by dura mater. Otherwise, the fœtus, externally, was

well formed. Sex female. In consequence of the great size of the head, an extensive rupture of the uterus took place, and the patient died in the course of the day. After the occurrence of the accident, the child was turned, and the lower extremities and body came away readily, but the head remained fixed in the pelvis until it was perforated through the frontal bone, after which there was a copious discharge of water, and it was at once born. 1843.

*Dr. J. C. Hayden.*

806. A fœtal cranium, showing the effects of hydrocephalus, and the condition of the bones in fissure of the palate. It is much enlarged, measuring seven inches in length, and four inches and one-fourth between the parietal protuberances; the sagittal suture varies in width from two inches to two and three-fourths, and the whole posterior portion of the cranium is largely open. Between the frontal bones, anteriorly, are several ossa Wormiana, two of which are quite large; none being found about the occiput. The nasal bones are one inch apart, and directed upwards and outwards. The left superior maxillary bone is imperfectly developed, and contains the rudiments of the canine and two bicuspid teeth only; it is widely separated from the vomer, which last is quite broad, and altogether larger than usual. The right superior maxillary is well developed, except in its palatine portion, there being a deficiency from behind forwards nearly to the alveoli; the separation from the vomer, however, is much less than upon the other side. The distance between the palatine bones is ten and a half lines. Connected with the right superior maxillary is a portion of alveolus, or intermaxillary bone, which contains the first incisor tooth of the left side.

The brain was tolerably developed, and some appearance of convolutions was seen, but it was not in a state for any further examination. Internally, the organs were well formed. Externally, and before dissection, the fissure in the lip, upon the left side, and the double fissure in the palate corresponded with the condition of the bones, the cavity of the left nostril and that of the mouth being directly continuous, and the left ala nasi being carried apparently off into the middle of the cheek, so that, at first sight, the nose upon this side seemed to be wanting. Otherwise, the fœtus was well formed.

Labor came on at the end of the eighth month, and was terminated in twenty-four hours. The membranes ruptured quite early, as Dr. D. supposed at the time, and there was at once a discharge of water, which he estimated at two quarts, after which the pains subsided for some hours. The child, when born, had an extensive laceration in the posterior part of the scalp, and a direct communication with the cavity of the cranium, but the scalp itself appeared to be well developed, and perfectly sound in structure. 1844. *Dr. Horace Dupee.*

807. A highly finished and very correct drawing, by Dr. James F. Colman; showing the external appearances of a monstrosity which was presented to the Society by Dr. H. B. C. Greene. The fœtus weighed eight pounds and two ounces, and, from its size, the labor was very difficult. The most conspicuous object was a cyst, which arose from the top of the head, rather to one side, and was more than half as large as the head itself; consisted mainly of integument, and seemed to be connected with the membranes of the brain, having burst during labor, and discharged one or two pints of fluid. The convolutions of the brain were seen, but the organ was not examined. The situation of the eyes was marked externally by a slight linear depression, the orbits being filled with adipose substance; there was, however, something like a membrane, with a black substance upon it, and which was probably the choroid coat; no trace of optic nerves. The nose consisted of two slightly projecting alæ, and a small intermediate prominence; nasal cavities distinct, but terminated posteriorly in a cul de sac. About the mouth, there was a double hare-lip, the appearance of a deep fissure of the palate, as above noticed (p. 269), and an adhesion of the under surface of the tongue, quite to the tip. The sex was apparently female, but, on separating the labia, which were large and well developed, there was found nothing, except the opening of the urethra at the upper part of the fissure, to show that they were anything more than a simple fold of the integuments. At the umbilicus there was a hernial protrusion of the intestines, and otherwise the trunk was well formed.

The lower extremities (No. 810) were quite short; the feet, however, were of the full size, but extended so as to form a

continuous line with the front of the leg. Each foot has six perfect toes. On dissection of one of these extremities, there were found six metatarsal bones, three of them resting upon the cuboid, and the remainder on three cuneiform bones, one of which last was supernumerary, the large cuneiform projecting so far beyond the edge of the foot as not to support any one of the metatarsal bones. The bones of the thigh and leg were short, but broad and stout. One of the upper extremities (No. 810) had five perfect fingers, besides the thumb, but upon the other, the supernumerary finger arises from the cubital edge of the hand, and is directed backwards towards the fore-arm, as in a case quoted by St. Hilaire (I. 686.)

On dissection, the epiglottis was found to be wanting, except for three little shreds; glottis large and very prominent; vocal cords wanting; body of the hyoid bone very broad, and the thyroid cartilage malformed. Thoracic organs well developed. Stomach, intestines, liver and pancreas well. Spleen very much fissured and lobulated (No. 812.) Kidneys very large, and much altered in structure (No. 811,) the renal capsules being as small as in the "acephalous fœtus." Testicles and vasa deferentia well formed, these last opening freely into two distinct cavities, that were situated in a body, which seemed to partake of the character of a prostate gland, of the vesiculæ seminales, and perhaps of the uterus; these cavities opened upon each side of the verumontanum, like the vesiculæ, but differed from them in structure. In front of these, but still in the same organ, was a third cavity of considerable size, rough upon the inner surface, but quite different in structure, as it was distinct from the first two, and opening largely upon the top of the verumontanum. The inner surface of the urinary bladder, to the extent of about half an inch, had a strongly marked arborescent appearance, as usual in the cervix uteri; neck large; urethra pervious throughout, and opened as above stated, but without any appearance of a penis or clitoris.

808. Cranium of the specimen above described. The vault is entirely open, as represented in Figure 19, the bones which form the sides being tolerably, though irregularly developed, and deeply serrated upon their edges. Parietals wanting. The basilar and two lateral portions of the occipital bone are suffi-

ciently well formed; the posterior portion consists of two pieces, that are distinct, and, for the most part, widely separated, though they meet to a small extent superiorly. Upon the right side, and connected with this last part of the occiput, is a small, triangular bone, two or three lines in diameter, which would perhaps be regarded by some as a rudimentary parietal, and upon the opposite side there seems to have been a corresponding one. This posterior portion of the occiput is, moreover, distinguished by a considerable lateral distortion. Temporal bones sufficiently well, the passage for the carotid forming a deep groove. The sphenoid bone is sufficiently large, but very irregularly developed; the small wings are separated from the body to the extent of two or three lines, and are connected with the orbital portion of the frontal bone and the æthmoid; the body of the bone being connected anteriorly with the united maxillaries; large wings sufficiently well developed. The superior maxillary bones are very broad anteriorly, and short in their antero-posterior diameter; the alveoli being for the most part very large, and the palatine fossa deep and much compressed; posteriorly, the orbital portion inclines directly backwards, and the two are united by a broad suture below the æthmoid bone. The palatine bones are small, and unite so as completely to close the posterior nares. The nasal cavity is large, broad, directed upwards, and terminates in a cul de sac, the orbital cavities being small, irregularly developed, and opening largely into the cavity of the cranium. The æthmoid seems to be imperfectly developed, and the vomer is probably wanting. The inferior maxillary bone, as shown in the figure, is very irregular, and without any appearance of an angle; the two pieces are intimately united, the chin is much elongated, and from beneath it there projects a large, thick spine, for the insertion of muscles; in the situation of the angles it flares off on each side in a broad spine, and, upon the inside, there is a strong ridge of bone, which terminates in a very prominent spine, about where the nerve enters; the coronoid process is comparatively small, and the alveoli are quite large, as in the upper maxillary bones. The other cranial bones are not remarkable, neither were those of the trunk. 1838.

*Dr. H. B. C. Greene.*

809. The two upper and one of the lower extremities of the specimen last described.
810. One of the kidneys, from the above specimen; length two inches and ten-twelfths, and otherwise large in proportion; surface unequal and irregular, but not lobulated, and having nothing like an external tunic that can be raised. The other kidney, which perfectly resembled it externally, having been cut open in the recent state, there was found no trace of cortical nor tubular portions, except for two very small and doubtful mamillary processes; consisted of a close, tough, but very flaccid tissue, and contained an immense number of small cysts, from half a line to one line in diameter. These cysts were collapsed, as if the fluid, if they ever contained any, had been absorbed; their parietes were firm and moderately thick, and they could be very readily detached from the substance in which they were imbedded. The same appearance was found in the kidneys of a patient from whom a malformed uterus (No. 652) was taken, and something of the kind also in No. 788.
811. Spleen from the above case.
812. Skeleton of a monstrous Calf. The animal was born at Wrentham, March 15th, 1839, at the full period, and was received on the following day in a perfectly fresh state. It was regarded in the neighborhood as a "calf changed into a bulldog," and the supposed resemblance, as well as the fact of the malformation, was attributed to a particular fright which the cow had received during the early months of gestation. The head was full and rounded, the line of the face was abrupt, the muzzle was short and square, and the under lip was somewhat projecting. The extremities were very short, but of full size, and this was one of the most remarkable peculiarities in the case; the anterior being turned directly backwards, the posterior backwards and inwards. The measurements were, from the muzzle to the root of the tail twenty-seven inches, and to the top of the head seven inches and three-fourths; circumference of body twenty-six inches; extremities six inches in length, the anterior being six inches and three-fourths, and

the posterior seven inches in circumference. On dissection of the thorax and abdomen, nothing unusual was found.

The cranium is represented in Figure 20, and presents the following peculiarities, as compared with a standard specimen of about the same age. The cranial portion is sufficiently large, but quite broad and rounded; no indications of hydrocephalus, which, according to St. Hilaire, (II. 212) has been so often observed in animals affected with this form of monstrosity, the bones being sufficiently thick, and the structure healthy. The sagittal and lambdoidal sutures exist, but with a slight deficiency of bone at their junction. The superior and lateral portions of the occiput are co-ossified, as also the basilar portion and the sphenoid bone. Foramen magnum small and irregular. Basilar portion of occiput thick, quite irregular, and with a well marked longitudinal fissure upon the under surface. The facial portion of the skull is also quite broad, with a flaring of the upper and lower jaws; the shortness, however, is the most striking peculiarity, the distance from the posterior extremity of the vomer to the extremity of the intermaxillary bones being three inches and one-fourth, whilst in the other cranium, which could have been very little older, it was five inches and three-fourths. A broad fissure in the palate is also observed, not involving the intermaxillary bones, but extending quite through the maxillaries, the separation between these last being one inch and two-thirds, and the palatine portion of course very imperfectly developed. Orbits large. Nasal bones short, and very broad.

The trunk is separately preserved, and also the individual extremities, as ligamentary preparations; the first is well formed, excepting the pelvis. The feet, also, with the carpus and tarsus, are well formed, but the other parts are exceedingly imperfect; the scapulæ, humerus, radius and ulna, femur, tibia and fibula consisting of very short, thick, and irregular bones, measuring generally from one inch and a fourth to two inches in length. Each of the ossa innominata consisted of a single piece, and were quite as imperfectly developed as the bones of the extremities, the cavity of the pelvis being very small. The extremities of the femur and humerus were formed by very large, rounded, cartilaginous masses, but are now, of course, quite dried up. 1839. *Dr. J. B. S. Jackson.*

813. A drawing, to show the external appearances in the above case ; by *Dr. Jeffries Wyman.*
814. A fœtal skeleton, showing an imperfect development of the extremities, &c. The subject was a male child, premature and still-born. It was quite plump, and generally well developed, externally and internally ; the hands and feet, also, as in the last case, were of full size and well formed, but the limbs were very short, and the bones thick and stout. Before the skeleton was dried, the humerus and ulna measured, each, one inch and a fourth in length, and the hand one inch and a half ; the femur one inch and a fourth, the tibia one inch and a third, and the foot nearly two inches ; the femur being considerably curved, and some of the other bones more or less so. The cranium is generally well formed ; the parietal bones, however, are deficient on each side of the vertex, so as to leave a defined opening, which measures one inch and three-fourths transversely, and one inch in the opposite direction, with two ossa Wormiana at the posterior fontanelle, and a third about the middle of the sagittal suture. The ribs also are shorter than usual. The spine is perfect, and measures eight inches in length. 1846. *Dr. John Homans.*
815. Cast in plaster of the above specimen. *Dr. William E. Coale.*
816. Imperfectly developed extremities, in connection with hydrocephalus, and malformation of the cranial bones (No. 817.) This case occurred in the practice of Dr. E. T. Learned, of Weymouth ; the child presented by the breech, and in about an hour the head was removed. The head was quite large, and discharged, on being tapped, about five or six ounces of serum ; external ears malformed and very imperfect ; lower jaw also very imperfect, and evidently disconnected with the base of the skull.
- The right upper extremity, before dissection, consisted of an arm and hand which were well developed, except for an absence of the thumb ; the hand, however, formed a right angle with the arm ; the fore-arm is wanting, and the carpus is seen, in the preparation, to be directly attached to the humerus.

The left upper extremity consisted of a hand having only three fingers, but otherwise well developed; seemed to be attached almost directly to the shoulder; a short bone, however, could be felt, and this, on dissection, proved to be an imperfectly developed humerus. The right lower extremity consisted of a foot, having four toes, but otherwise well developed, though arising directly from the groin; on dissection, the fourth metatarsal bone was found to be entirely wanting, except for its very anterior extremity; the tarsus was developed in proportion to the number of toes. The left lower extremity also arose directly from the groin, was an inch and a quarter in length, consisted of a single, well developed toe, and terminated posteriorly in a proper heel, the bones and cartilages being developed in accordance with the external appearances. The muscles, nerves, and blood-vessels were not examined. In place of the pelvic bones, there are seen on the right of the sacrum two small cartilages, one above the other, and upon the left side a third, which is still smaller. The pelvis, and the right upper and left lower extremities are preserved together in one jar in spirit, and the left upper and right lower extremities are preserved in a second jar, as dry specimens. The internal organs were well formed, and the spine was six inches and a quarter in length.

*Dr. Winslow Lewis.*

817. Some of the cranial bones, from the above case, mounted separately, and displayed upon a black-board. The lower jaw consists of two small bones, of the usual width, and united by a proper symphysis, but developed only to the extent of the alveoli for the incisor and canine teeth. The two upper maxillary bones are united, and in these also the alveolar portion is very deficient. Between the petrous portion of the temporal bone and the body of the sphenoid is a large, thick, and exceedingly irregular bone, nearly equal in extent to the body and wings of the sphenoid; upon the right side it is separate, but upon the left it is ankylosed to the sphenoid and temporal bones. 1845.

*Dr. Winslow Lewis.*

818. A drawing, in India ink, of Mr. Benoni T. Bachelder, who exhibited himself in this city not long since, and an account of whose case was published, with remarks, by Dr. O. W. Holmes,

in the Boston Med. and Surg. Journal (March 3d, 1847.) According to Dr. H., Mr. B. is twenty-eight years of age, and has one perfect extremity, the others being abortive stumps, and much like those left after amputation.

The right humerus is a foot or more in length. The deltoid and pectoral muscles are well developed; the biceps has a well marked fleshy belly, but tapers rapidly, in common with the other muscles of the arm, towards the lower extremity, which is rounded off without anything like a cicatrix, and has a small, wart-like excrescence upon one side near its termination. This, Mr. B. says, made its appearance some years since, and was not a part of the original conformation. The humerus is felt to be somewhat flattened, so as to spread a little transversely at the lower end, as if there were an effort at the formation of condyles. All the movements of the shoulder-joint are perfect, and the muscular power is very considerable.

The thigh-bones are about a third of the natural length. The extremity of each of the stumps has a little, mushroom-like appendix or fleshy pad attached to it; that on the right the largest, bearing a certain resemblance to a flattened and boneless great toe, and capable of slight voluntary motions. The left is smaller, and can be retracted by a voluntary effort of the muscles of the stump. The pelvis is said to be narrow.

The left upper extremity is well formed and exceedingly muscular. Supporting himself upon this, he is able to move freely about, going up and down stairs, crossing the room in a rapid series of bounds, and throwing himself into a chair with the most perfect ease.

Otherwise, Mr. B. seems to be fully developed, and he is one of a large family, all of whom are well formed. His general health is quite good, and his weight is at present ninety-two pounds, but, at the age of twenty-three, was, as he says, one hundred and seventeen.

The drawing was made by *Dr. William T. Parker.*

819. Drawing of a monstrosity, which was presented to the Society by Dr. Abner B. Wheeler. The parietes of the abdomen were wanting upon the right side and in front, so that the intestines and a large part of the liver protruded, forming a mass as

large as the fist. The intestines were very much matted together, had a thickened, fleshy look and feel, and were of a deep red color, there being also a considerable effusion of greenish yellow lymph over the peritoneal surface.

The right lower extremity, as shown in the drawing, was entirely wanting, but the left was well developed. This last stood off at a right angle from the trunk, the knee was strongly flexed, and the foot turned inwards; the toes were malformed, the first being sufficiently large, but scarcely separated from the second, the second and third fused, the fourth distinct, and the fifth large and widely separated from the rest.

Otherwise, the fœtus was well formed externally, except for some lateral compression of the thorax. Sex female. Weight two pounds and a quarter.

On dissection, the right internal iliac artery was found to be no larger than a small thread, the left being of full size. The right sacral nerves were also exceedingly small, excepting the first. The uterus was of a conical form, the apex being inclined towards the left side, and giving off the Fallopian tube; left ovary well developed; right tube and ovary wanting. The other abdominal organs were not remarkable except for what is said above of the liver and intestines. In the thorax there was considerable serous effusion, and the arch of the aorta gave off four vessels of about equal size, but otherwise nothing unusual was observed.

The mother had previously had one well formed child, and felt the motions of this last as much as she did those of the first. Labor came on at the end of the seventh month; the head presented, the quantity of liquor amnii was smaller than usual, and the child and placenta were expelled together. The heart beat for about ten minutes, and the child gasped a few times after it was born, a general convulsion being produced whenever it was moved.

The drawing was made by *Dr. Jeffries Wyman.*

820. Skeleton of the above monstrosity. A small bone, measuring about two by three lines, is connected with the right side of the sacrum, and upon this there was, when recent, a rounded cartilage, about a line in diameter, but otherwise there is no trace of a right lower extremity. The left lower extremity is in the

position in which it is above described, the os innominatum being well developed, as is the rest of the skeleton. 1839.

*Dr. Abner B. Wheeler.*

821. Placenta from the above case; injected and dried. The membranes are connected with the cord throughout, which, in the recent state, was but three inches and a quarter in length; they were also continuous with the integuments of the fœtus about the right hypochondrium, and adhered slightly to the left lobe of the liver.

822. Cast in plaster of an upper extremity. The arm was well formed; the fore-arm was pretty well developed, but bent to a right angle upon the arm, and measured but seven inches in length; the hand was bent to a right angle upon the fore-arm, and sufficiently developed, except for the thumb, which was in a very rudimentary state, and connected with the integument by a small peduncle.

The subject of this malformation was a man, thirty-five years of age, who died at the Almshouse, October 21st, 1844, and was known during life to have had a good use of the limb.

The dissection was made by Dr. B., who found the muscles developed in accordance with the condition of the bones (No. 823); the biceps was attached to the ligament which usually connects the radius and ulna; the nerves ran in a perfectly straight course, but the arteries were much contorted.

The cast was taken by *Dr. Henry J. Bigelow.*

823. A ligamentary preparation of the upper extremity just described; by Dr. Samuel Cabot. The radius is seen to be entirely wanting. The ulna is strongly developed, but curved upon itself, and measures six inches and three-fourths in a straight line. The inferior articulating surface of the humerus is narrow, as it receives only the ulna, but that portion is most developed with which the radius is usually connected; otherwise this bone is well formed. The bones of the hand are well developed, except for the thumb, which consists of two rudimentary phalanges, upon the last of which is a small nail; the trapezium also is wanting. *Dr. Winslow Lewis.*

824. A rhinencephalous pig ; preserved in spirit. The eyes are contained in a common orbit, but the fusion is not complete ; the proboscis is directly above them, and is about one inch and three-fourths in length, and one-fourth of an inch in diameter.

825. A second specimen. This subject was older than the last ; the fusion of the eyes is less complete, and between them and the proboscis the cranium appears to be deficient, or, at least, the integuments are wanting. This last complication is very unusual.

826-30. The following specimens of "Blighted Fœtus" had the flattened, bloodless, macerated look, which is generally seen in these cases, and, as usual, they were all cases of twins, the other fœtus being well formed.

826. The first specimen is shown in Fig. 27, and weighs only ninety-two grains. The trunk is one and a half inches in length, smooth on the surface and quite firm, and terminates bluntly, without any trace of a head or upper extremities. The pelvis, however, exists, and the lower extremities are tolerably developed ; legs crossed, and strongly flexed, so as to come in contact with the body, the left foot being also bent into contact with the leg ; right foot very imperfect. Labor occurred at seven and a half months, and the perfect child was born first. 1838.

*Dr. William J. Walker.*

827. The second specimen (Fig. 28) is four inches in length, two in width, and was enclosed in a distinct cavity attached to the placenta of a full grown fœtus. In this case the lower extremities are wanting, but the head exists ; also, the spinal column, the ribs, the scapulæ, and one of the upper extremities are seen ; this last adhering to the trunk. 1834.

*Dr. John Odin.*

828. The third specimen is about the size of a five months fœtus, the external parts generally being well developed ; enclosed in a sac, which was connected with the placenta of a large and vigorous fœtus ; cord fourteen inches in length. 1830.

*Dr. Joseph W. McKean.*

829. The fourth specimen is less developed than the last, the weight being less than five ounces; connected with the placenta of a mature fœtus. This case is remarkable for the strong flexion of the limbs, and for being enveloped in an abundant, soft, ragged, adventitious deposit. 1829. *Dr. John Ware.*

830. A cranium, prepared to show the great overlapping of the bones which takes place in the blighted fœtus, when the development is sufficiently advanced. In the recent state, the subject of this case resembled No. 828, and a healthy eight months fœtus was born at the same time.

*Dr. D. H. Storer.*

831. A human fœtus, between two and three months old, and affected with hare-lip upon the left side. 1830.

*Dr. J. H. Lane.*

832. The superior maxillary bones of a six months fœtus, that was affected with hare-lip. That on the left side wants the two first alveoli, but is otherwise well formed; the alveolus for the first incisor, however, exists as an intermaxillary bone, and is connected by a slender process with the vomer. The right superior maxillary is sufficiently developed.

833. A drawing of the right hand of a child between two and three years old. The fingers are closely united, and there is a single, continuous nail extending across the whole, the outline of the fingers being distinctly felt. The thumb is well developed, and the hand is otherwise sufficiently well, except that the articulation of the middle finger with the metacarpus is not in a line with the rest. The case occurred (1847) in the practice of Dr. Anson Hooker, of East Cambridge, and the drawing was made by

*Dr. Jeffries Wyman.*

A somewhat similar case was reported not long since to the Society, but in which the deformity was considerably greater, the right hand being here also affected. The thumb was wanting; three fingers only could be felt, and these, with three metacarpal bones, were more or less imperfect; nail not perfectly continuous, but divided towards one of the edges into two portions. The subject of this case was a well formed

child, about two years old, and a patient of Dr. Edward Jarvis, of Dorchester.

## II. MONSTROSITIES BY EXCESS.

834. "Two male children, well grown, united from the shoulders on one side to the navel; there is but one umbilical cord; the thorax is common to both, having no partition, and but one heart; the aortas have an arch from two ascending arteries, arising, apparently, from each superior corner of the heart." The above account of this specimen is from the Boston Medical Intelligencer, for August 19th, 1823. The union seems now to be rather anterior than lateral.

*Dr. George Parkman.*

835. Skeleton of two female children, that were united face to face from the top of the sternum to the umbilicus, being otherwise well formed, as is the last specimen, which, in the recent state, it very perfectly resembled. Weighed nine pounds and two ounces, and was quite fresh when received, but died probably during the delivery, there being some laceration of the soft parts, with fracture of some of the bones; the mother also died in consequence of the difficulty of the labor.

The thorax forms one large, continuous cavity, and has a sternum upon each side, but these last, instead of being distinct, as, according to St. Hilaire, they usually are in these cases (III. 95,) are united so as to form an arch above the common cavity.

On dissection of this fœtus, the alimentary canal, the pancreas, the spleen, the urinary and genital organs, the thymus gland, and the vocal and respiratory organs were found to be in double sets and well formed; some adhesions only existing between the intestines and the other parts. The principal nerves were also dissected.

The diaphragm formed one large and continuous arch between the two fœtuses.

The two livers were united, but appeared to be no larger than the single organ in a fœtus at the term. A single broad ligament extended from the umbilicus along each face of the organ to the diaphragm, making the two abdominal cavities

quite distinct. There were two umbilical veins and a gall-bladder upon each face of the organ, the ducts being distributed as usual.

The two hearts were united to form one common organ, the ventricular portion resembling somewhat, in its breadth, the heart of a tortoise. There was but a single auricle, irregular on the inner surface, and having a band running across it midway, but with nothing that could be called a septum; two appendices were found at each extremity, with the pulmonary veins and the superior vena cava of each fœtus. The ventricular portion consisted of two cavities, the septum being perfect, except for a small opening at the upper part; auriculo-ventricular valves well developed. At one extremity of this ventricular portion there arose an aorta which was in every way normal, and by its side a pulmonary artery, smaller than itself, and having but two valves; at the other extremity there was another aorta, which gave off the pulmonary artery. The only peculiarity noticed in the vessels was the existence of but one umbilical artery in one of the fœtuses. 1837.

*Dr. Nathaniel Miller, of Franklin.*

836. Drawing of a monstrosity that was sent to the Society by Dr. E. T. Learned, of Weymouth. The subject of this case consisted of two fœtuses, which were united from above downwards, but separate below the umbilicus; having two perfect faces, four upper extremities, and being well formed externally, except for the fusion. Sex male. Weight twenty-four ounces, and length of the spines three inches and a fourth.

The mouth of each fœtus opened posteriorly into a common pharynx, from which descended the œsophagus (Figure 22.) Below the diaphragm there was seen the stomach, which, when distended, was about the size of a large cherry (No. 838); this communicated with a portion of intestine, about one inch and a quarter in length, and this opened into a cavity which sent off a separate intestine to each fœtus, the small intestine being seven inches in length, and the large eight inches, without including the rectum. The liver was decomposed, and unfit for examination. Urinary and genital organs double, and well-formed; the respiratory organs were also double, with the thyroid and thymus glands.

There were two separate hearts. Each had, at least, one auricle, and in one of them there was an appearance of a second; each had also two ventricles, which communicated freely, and gave off from their common cavity an aorta and a pulmonary artery, the vessels being distributed as follows. Each aorta gave off two carotids, after which the arch became very small. One of the pulmonary arteries gave its branches to the lungs, and its ductus arteriosus to the aorta, which afterwards sent off the two subclavians. The other pulmonary artery gave its branches to the lungs, and then a large branch which formed the second descending aorta, from which one subclavian artery was seen to arise; the second having probably been cut off; the ductus arteriosus was then given off, and, after having joined the arch of the aorta, opened at once into the first descending aorta, and thus formed a free communication between the two.

The drawing was made by *Dr. Jeffries Wyman.*

837. Skeleton of the above monstrosity; not mounted. The head contains two entire sets of bones, which are sufficiently developed for the age of the subject, though somewhat crowded; most of them have been detached, but those of the base still remain in connection, and are represented in Figure 21. The sphenoids are the only ones that require any particular notice; the body of each of these bones is divided longitudinally into two equal portions, and each revolves one-quarter of a circle, so as to bring the posterior edges of the two corresponding portions into opposition; the inner lateral edges of each sphenoid, then, are opposed to those of the opposite sphenoid, whilst the outer lateral edges are opposed to the basilar portion of the occiput and to the temporal bone. This is certainly very different from a figure of a similar case by Serres, in the *Memoirs of the Institute* (vol. 55.)

The large and small wings are sufficiently well, except that three of the last retain their early fœtal condition of being distinct bones. The other bones are not remarkable, except for some difference in the size of the parietals in the two subjects, and a fusion of the two portions of each frontal bone. The thorax is double, as usual in these cases, and the two skeletons are otherwise well formed. 1836.

*Dr. E. T. Learned, of Weymouth.*

838. A model, in wax, of the œsophagus, stomach, and upper part of the intestine, from the above monstrosity; as already described.

839. A foetal Calf, preserved in spirit, the age of the subject being perhaps two or three months. Malformation as in the last case, except that one of the faces is somewhat imperfect.

840. A double Pig, similar to No. 836, except that instead of a second face, an ear only is found, perhaps a fusion of two. A stuffed specimen.

Some years since, a human subject, showing this same form of monstrosity, was brought from Siam, and was in the Society's cabinet for a time, but was afterwards removed.

841. A double Guinea-pig, preserved entire in spirit. Malformation as in the last case. *Dr. George B. Doane.*

842. A double Chicken, preserved entire in spirit, and malformed like the last specimen; there is also a lateral distortion of the upper mandible. This form of monstrosity is common in the mammalia, but St. Hilaire does not mention its occurrence in birds. 1845. *Dr. Francis W. Cragin*, of Surinam.

A second specimen has lately been received, and resembles the one just described, except that the upper mandible is not distorted. Upon the back of the head there is seen the external opening of the central ear, or perhaps, from the size, a fusion of two.

843. A double Kitten, preserved entire in spirit. Malformation as in No. 840, except that the ear on the back of the head is wanting.

844. Skeleton of a double Lamb; not mounted. Externally, this subject resembled the last, as a monstrosity, except for some peculiarities about the head. Below the angle of the jaw, upon the right side, was a narrow fissure, one and a half inches in length, opening largely into the pharynx, and at its posterior extremity, on separating its edges, was seen a malformed internal ear. The external ear, upon the left side, was well formed, but the right, which was situated not far from the fis-

sure, terminated in a cul de sac, though otherwise well developed. Secondly, there were beneath the anterior extremity of the lower jaw, and inclining to the left side, two incisor teeth, the relations of which will be hereafter described.

On dissection, there was seen on the back of the pharynx a fold of membrane, which was evidently the rudiment of a second palate, and beneath this some appearance of the root of a second tongue. Œsophagus single, and well formed.

The stomach was formed by the fusion of two organs. The fourth, or digestive cavity, was single, but very large, measuring, in a collapsed state and before being opened, four and a half inches in length, and one and a half inches transversely. Of each of the three other cavities there was a double set, those which corresponded being equally developed. The first extended off two inches from the lower extremity of the œsophagus upon each side, and was about two-thirds of an inch in diameter. Where these two opened into the fourth cavity there were seen, closely grouped together, four others, each of which was about one-third of an inch in diameter; these, of course, were the second and third cavities, and one of each of them was situated, side by side, on each face of the stomach, or between the two first cavities.

The intestine continued single for seven feet and a half, and then divided, one portion consisting of thirty inches, each, of small and large intestine, and the other of about thirty-four inches, each, of the same. Just at the division there was a sort of diverticulum, six and a half inches in length, terminating in a cul de sac, and lying free in the cavity of the abdomen; this appendage was not uniform in size, but was in some parts considerably smaller, though nowhere larger than the intestine itself.

There were two distinct livers, one being somewhat larger than the other, and each having its gall-bladder, ducts and vessels; the umbilical vein entering upon the convexity of the organ. There were also two distinct sets of urinary and genital organs.

The lungs, trachea, and thymus gland were in double sets and well-formed. The larynx, which corresponded to the face of the animal, was also normal, though the cornu of the hyoid bone on the right side, and in connection with the fissure in the

neck, was imperfectly developed. The other larynx was altogether small, and the cornua of the hyoid bone, which were otherwise not remarkable, were so closely connected as to appear like one bone before they were separated.

Two distinct hearts were found; one was decidedly larger than the other, but both of them sufficiently developed, and, seeming to be externally well formed, were not cut open. An aorta and pulmonary artery arose from each, and communicated, as usual, by the ductus arteriosus. The arch of each aorta gave off a single vessel which very soon divided into the two carotids; one of these vessels being proportioned to the size of the head of the animal, but the other quite small. At some distance beyond the arch each aorta gave off two subclavians, directly opposite to each other. At the arch the two aortas communicated by a vessel which was about the size of either of the ascending portions.

Of the skeleton. — The cranium is single in front, but is not well formed, there being a want of symmetry between the two sides; posteriorly, it is quite broad, and formed by the fusion of two. There are two occipital foramina, two-thirds of an inch apart, one being of full size and well formed, the other considerably larger and somewhat irregular. The lateral and two basilar portions of the occiput are quite distinct, these last being connected with a common but broad sphenoid bone, and also with each other through nearly half their extent; the posterior portions are less distinct, being partially fused with the parietals. Of these last there seem to be two sets, and connected with each an interparietal. Between the lateral portions of the occiput are a few, small and very irregular bones upon the median line, to represent the face of the second fœtus. Upon the left side the temporal bone is well developed, but on the right the bony cavity connected with the tympanum is very imperfect, its internal structure being exposed in the form of a very irregular surface, which, when recent, was covered by a thin, delicate membrane, and was seen in this state at the bottom of the fissure which opened externally beneath the lower jaw. There is much lateral distortion of the lower jaw, especially on the right side, and connected with the posterior inferior portion of the symphysis is a small, distinct bone which contains two incisor teeth, (Fig. 23,) the atrophy

of the lower jaw being much greater than in any case referred to by M. St. Hilaire, where he treats of this form of monstrosity (III. 257.)

The bodies are connected as usual in these cases, the sternum and ribs corresponding to the face of the animal being well developed, but not those upon the opposite side. To distinguish the two bodies, that may be called A which corresponds to the right side of the face of the animal, and the other B. The spines are distinct throughout, and have the usual number of vertebræ. The spine of A has, in the cervical and upper half of the dorsal portion, a strong, double lateral curvature, there being a considerable atrophy of the dorsal wings upon the concave side, but with less difference in the neck, where the curvature is less marked; the atlas, however, is thrown quite to one side; the spinous processes and wings of the first six dorsal vertebræ are fused, and also the seventh and eighth. The spine of B. is less curved in its dorsal portion, and the cervical very little if at all; the first four dorsal wings are fused, also the fifth and sixth, and the seventh and eighth. B. has thirteen well developed ribs on each side. A. has a remarkable development of the right transverse process of the vertebra in place of the thirteenth rib, and, as it seems intended to represent a rib, this vertebra has been regarded as one of the dorsal; the fourth, fifth, sixth and seventh ribs on the left side are very closely fused posteriorly, but anteriorly divide into two portions, otherwise the two bodies appear to be well formed, as are also the eight extremities.

The subject of the above case was sent to the Society in May, 1843, by *Dr. Henry C. Perkins*, of Newburyport.

845. Skeleton of a double Pig; not mounted.—Externally, this monstrosity resembled No. 841, except for a deficiency of the vault of the cranium, and that there was no additional ear upon the back of the head. How far the brain was developed, if at all, could not be ascertained, as the spinal marrow had been cut off at its upper extremity, being there of about the proper size; the specimen had been in spirit, but was otherwise in a state of good preservation. The posterior portion of the occiput is very imperfectly developed, but connected as usual with the lateral portions, and forms with them a high wall perpen-

dicular to the base of the cranium. The cranial portion of the frontal bones is wanting, and the parietals are very imperfectly developed; these last being separated by the whole width of the base of the cranium. The palatine, the maxillary, and, to a certain extent, the intermaxillary bones, are separated, as usual, in fissure of the palate. Otherwise, the cranium is sufficiently well formed.

The two spines are united in the cervical portion. Posteriorly, the first three vertebræ are single; the fourth is double, having two sets of wings, and something like a rudimentary one between them, and from the fifth downwards the two columns are separate throughout. Anteriorly, the fusion is much less complete, the two rows of bodies being distinct throughout; the first body in each spine consists of two bones, one above the other, and between those of the second vertebræ there is an additional bone of considerable size; the fourth, and all below, are well formed. The spinal canal is single to the fourth vertebræ. The thorax is formed, as usual, by a fusion of the two, the side corresponding to the back of the head being imperfectly developed. The extremities which correspond to the imperfect side have the scapulæ united by their upper edges, and also by their spines (Figures 33 and 33'), but are otherwise well formed, as are the two other upper extremities, and both sets of the lower.

On dissection, the œsophagus was found to be single, but communicated largely throughout with the larynx and trachea, as has been observed in some analogous cases (*Anom. des Org.* III. 144.) The stomach (Fig. 34) was single, but formed by the union of two. The small intestine was single for the first thirty-two inches; it then became dilated, as shown in Figure 24, and from this second cavity there arose a double set of intestines, the small measuring between five and six inches, and the large about twenty-four inches. Two inches above the dilatation there was a diverticulum, ten lines in length, and situated parallel to the intestine, to which it closely adhered, except near the extremity. Both subjects were males, and there was nothing unusual in the genital or urinary organs, excepting that one set of kidneys was somewhat smaller than the other. The hyoid bone, epiglottis, larynx and trachea, corresponding to the face of the monstrosity, appeared to be

well developed, except that the two last, as above stated, opened freely into the œsophagus; the primary bronchia and the lungs were also sufficiently developed. About opposite to the lower part of the trachea, and in the parietes, as it were, of the œsophagus, there was found a second, small, rudimentary larynx, below which was a trachea of corresponding development, two bronchia, and a pair of lungs, these last being about one-third or one-half as large as the first pair. A large blood-vessel passed down between the cartilage of the larynx and its mucous surface, running parallel to and in front of the trachea, and dividing to send a branch to each lung, as it were a pulmonary artery; its origin, however, could not be determined, as it had been cut off about half an inch above the larynx.

The heart was single, and appeared externally well formed, except that no vessels were found to enter the left auricle; a large branch, however, entered the right auricle, and, from its situation, was probably the common trunk of the pulmonary veins. Internal structure normal. The aorta divided almost at once into two large trunks, one for each fœtus; and these gave off branches, which must have been the carotids and subclavians. The pulmonary artery gave off two small pulmonary branches, and sent to each aorta a ductus arteriosus, these two last vessels being of unequal size.

846. A portion of small intestine, from the above case, injected, and represented in Fig. 24. St. Hilaire (II. pp. 102 and 132) remarks upon dilatation of the intestine at the point of division as very rare, but refers to three cases.

847. Skeleton of a double Pig; mounted.

The cranium is malformed very nearly as in the last case, the vault being open superiorly, and the cavity quite shallow. The parietal bones form the lateral boundary; the cranial portion of the frontals is entirely wanting, as is also the posterior portion of the occiput, the lateral portions being well developed, but widely separated, and not anchylosed with the temporals, as in No. 845. There was also a fissure through the palate, and double harelip, the maxillary and palatine bones being separated as usual, with a deficiency of the facial portion of the intermaxillaries.

The seven cervical and first dorsal vertebræ are single, and then the spines divide. As in No. 844, the subject which corresponds to the right side of the face of the animal may be called A, and the other B. The spine of B is sufficiently developed to about the tenth dorsal vertebra, but with a considerable lateral curvature, and a fusion of two or three wings upon each side; at this point there was an antero-posterior curvature, and below this it is open as far as the sacrum, as in a case of spina bifida, the bodies and expanded wings forming a broad, flat surface; there are five lumbar vertebræ, and the sacral and coccygeal are probably normal. Upon the right side the wings of the vertebræ of A seemed to be well developed as low as the sixth dorsal, but with a partial fusion of the first three; upon the left side there are seen two very broad and irregular wings, which are fused with those of the right side. Below the sixth dorsal vertebra the spine is open throughout as far as the sacrum, and most irregularly and strongly curved or rather twisted upon itself, producing a degree of shortening such that in the recent state the ilium came nearly into contact with the ribs; upon the right side there are the wings of five lumbar vertebræ, and with these are connected the bodies, which consist of two broad and irregular bones, but upon the left side the wings are entirely wanting; the sacral vertebræ are imperfect, and the coccygeal entirely wanting. The thorax, which corresponds to the face of the animal, is sufficiently developed; the ribs on the left side of A, are fully so, except for a fusion of the first two, the whole number being fourteen; upon the right side of B there are thirteen, and they are more compressed. The thorax, which corresponds to the occiput of the animal, is represented by fourteen ribs, all of which are separate but much compressed, the first one or two belonging to the left side of A, and the others to the right side of B.

The pelves and extremities are well formed.

Before dissection the condition of the head and of the spines corresponded with that of the skeleton as above described; there were but two upper extremities, and the two lower of each of the subjects were united by integument as far down as the middle of the leg. The organs of the abdomen had been mostly removed, but there remained for B an intestine,

left kidney, bladder, testicles and penis; in A there was the right kidney, the testicles, and an imperfect bladder, but no intestine. The thoracic organs had not been disturbed, and were found normal, the aorta dividing for the two subjects just above the diaphragm. 1834.

*Dr. Francis W. Cragin, of Surinam.*

848. The cranium of a double Pig; mounted. This specimen differs from any in the present series (p. 298), inasmuch as there is a common central orbit, and the anterior as well as the posterior portion is composed of the parts of two individuals. The occipital foramina, the basilar and posterior portions of the occiput, the parietal, frontal, and nasal bones are double and well developed, though somewhat irregular; the anterior portion of the two faces being not merely approximated, but to some extent overlapping; one of the parietals also consists of two pieces. Upon the outer half of each cranium the lateral portion of the occiput, the temporal, the os unguis, the malar, and the intermaxillary bones are well developed; the upper maxillary of each, however, is deficient throughout in its palatine portion, there being a fissure of the palate as in the last case. Upon the inner half of each cranium the temporal bones are very imperfectly developed and completely fused; the tympanic cavities are much compressed, situated directly between the two occipital foramina, and show no trace of a division; the squamous portions consist of a single broadly expanded bone, bounded by the parietals and the occiput, and having in its centre a common meatus, the vaginal process of each bone being well marked; the petrous portions are situated between the two basilar. The central orbital cavity is formed mainly by the frontal bones and the anterior sphenoids; each of these last is perforated by a large optic foramen, and the two bones are intimately fused together, and also with the posterior sphenoid of the subject which may be called A, with the vomer of A, and with a bone of some size which may perhaps be the ascending portion of the palatine of B, there being nothing corresponding to this last in the other subject. Between the central orbit and the base of the skull there is now seen to be a free opening, and this is divided by a bony partition which seems to be formed by the internal wings

of the posterior sphenoids, that of B, however, being detached from the body of the bone; there are, of course, two basilar bones, and a posterior sphenoid connected with each. In front of the central orbit the os unguis of each subject is largely developed, but the superior maxillary bones are in the most rudimentary state, and show no trace of alveoli; the nasal cavity is open throughout; the intermaxillaries are very imperfect, and particularly that of A, which contains only one incisor tooth. The lower jaw is single, the branch corresponding to A being shorter than the other, and flaring outward.

The rest of the skeleton has been preserved separately, but not fully prepared; there are four upper and four lower extremities, and the thorax is formed, as usual in these cases, by a fusion of the two.

As this subject was in a state of advanced putrefaction, when received, the dissection was hastily made, and those parts only will be mentioned which were particularly examined. In the central orbit were two distinct eyes, and upon the back of the head a large double ear. The œsophagus was single, and situated between the two tracheæ; stomach formed as in No. 845; small intestine well developed, and single to within nine inches of its lower extremity, where it divided, but without any dilatation at this part; at the umbilicus was a considerable hernia. The respiratory organs were double, but both sets of lungs were very imperfectly developed; one larynx also being imperfect, and the cornua of the hyoid bone closely compressed, as in No. 844. The two hearts were widely separated, and each had its pericardium; internal structure of both normal; the vessels, entering and leaving the organs, were all of them traced, excepting the pulmonary veins, which, owing probably to the undeveloped state of the lungs, must have been very small and were not found. The two aortas communicated at the arch by a vessel which was of considerable length, and fully equal in size to either trunk; one aorta passed over the left primary bronchus, and the other over the right of the other set of lungs, as in No. 850, and, lastly, each aorta sent off at the arch two vessels, one of which soon divided. 1847.

*Dr. John C. Warren.*

849-57. In the present series, which is the reverse of the last

(836-48), the duplication commences with the head, and the fusion goes on from above downwards.

849. A double-headed Fish, preserved in spirit.—The two heads are about equally developed, and the fusion commences just behind the pectoral fins, the spines being traced separately to behind the anus. Each individual has a dorsal fin, and two pectorals, but the anus and a single pair of ventral fins are common to the two. The specimen belongs to the genus *Pimelodus*, and measures one inch and three-fourths in length, and one-third of an inch from the anterior extremity to the point of fusion. It was taken in the Gulf of Mexico, by Lieut. White of the U. S. Navy, he having caught it in his hand. 1846.

*Epes S. Dixwell, Esq.*

850. A drawing of the alimentary canal of a monstrosity that was born in the practice of Dr. Nathaniel Ruggles, of Nantucket, in June, 1846, and was subsequently examined in this city. It has been represented in Fig. 26, and the following account of the case, as it was reported to the Society, is here given, by the permission of Dr. R.

The subject of this case had two heads and necks, which were distinct throughout, one pair of upper and lower extremities, and a trunk which was formed by the fusion of two. Sex male. The mother was a middle-aged woman, and this, which was her first labor, occurred about the end of the eighth month. One of the heads presented, but Dr. R. brought down the feet, and after three hours accomplished the delivery, much force being required; the children lived about twenty-five minutes. Weight five pounds and a half. A hasty examination of the organs was made at the time by Dr. C. T. Collins, of New York, and Dr. Ruggles, and a short account of the case was published by Dr. C. in the *New York Med. and Surg. Reporter*, of which he was at that time the editor. The body was then sewed up, but the organs, which had been removed in a mass, were preserved separately, and a few weeks afterwards the specimen was sent to this city, where it remained for a short time; here it was again examined, and very recently the whole has been returned to Nantucket and buried.

With regard to the external appearances, it may be stated that there was no trace of a third upper extremity, and that the two spines, being traceable to the middle of the back, would probably have met about at the sacrum.

On examination of the organs, there were found two hearts within a common pericardium. One was perfectly normal. The other was somewhat smaller; consisted of a single, large, ventricular cavity, from which there arose an aorta of full size, and a small pulmonary artery, the ductus arteriosus being very slender; the left auricle was very much larger than the right, the limits between them being well defined, though there was only the trace of a septum. The lower vena cava was common to the two organs, and divided just above the diaphragm. Each aorta gave off a large vessel, which immediately divided, and just beyond this a second, undoubtedly the two carotids and a subclavian, the subclavian arteries arising from different aortas, as each of the two upper extremities belonged to a different subject. The aorta of the largest heart passed, as usual, over the corresponding left primary bronchus, but the other over the right primary bronchus of the second set of lungs, and somewhere between the arch and the diaphragm the two formed a common trunk.

The respiratory organs and thymus gland were in double sets, the lungs being small, irregular, and much fissured, except the one which corresponded to the malformed heart, and was upon the right side.

The alimentary canal, having been washed out and inflated, a drawing was made of it by Dr. Jeffries Wyman, and has been represented in Figure 25. The two stomachs were well formed, and one of them was of full size; the other was about half as large as the first, and buried, as it were, in a cavity in the liver. The duodenum of each was about three-fourths of an inch in length; the two then united to form a single intestine, which was three inches and a half in length, half an inch or more in diameter, and much contorted. Near the termination of this irregular portion of intestine was a diverticulum, three-fourths of an inch in length, and adherent to the intestine, its cul-de-sac being directed towards the great dilatation, into which the intestine now opened. The dilatation was three inches and a half in length in a straight line, and one and a

half inches in diameter ; considerably curved upon itself, and upon its large curvature sacculated, as the large intestine of an adult often is. The dilatation was followed by ten inches of small intestine, which arose quite abruptly, and eight and a half inches of large intestine, besides what may have been left in the body.

The liver was single ; lobes irregular. One well developed gall-bladder, with its ducts, corresponded to the largest stomach, and near it there was seen the situation for the second, if it had existed. According to the statement of Dr. R. there was one spleen and two kidneys. In the mass examined here, there were found two rudimentary spleens connected with the large stomach, and about a line or more in diameter ; one kidney with its renal capsule, and a second renal capsule without its kidney.

851. A double-headed Lamb. The two heads are united at an obtuse angle, and the central ears appear to be fused at the base. The animal is otherwise well formed, and, from its size, may have lived for some time after birth. A stuffed specimen.

852. A double-headed Kitten. There are no central ears, but the eyes are somewhat far apart. A stuffed specimen.

853. A second specimen, preserved in spirit. The central eyes are not fused, though they are in a common orbit, there being two perfect sets of lids. 1844.

*Mr. Kimball*, Proprietor of the Boston Museum.

854. A double-headed Chicken. The central eyes are probably fused, there being but one set of lids. The upper portion of the spinal canal seems to be open, as in the next case.

855. A double-headed Duck ; said to have lived for a short time. The two heads form a more acute angle than in the last specimen, but the central eyes are equally far apart. The top of the cranium may have been injured by violence, but the upper portion of the spinal canal seems to be open, as from congenital deficiency.

*Dr. J. B. S. Jackson.*

856. A small double-headed Snake, from South America. The

two heads appear to be equally developed, and form with each other a right angle as in St. Hilaire's figure, (Pl. xv.) the central eyes being widely separated.

*Boston Society of Natural History.*

857. Cranium of a double-headed Lamb. The animal was carried to the full period, and well formed, except for the head, which was sent to Dr. J. by Dr. L. W. Briggs, of Bristol, R. I. There were two perfect eyes, and upon the median line two others which were fused, the two cavities of the vitreous humor being separated by a common sclerotic coat. The cavity of the mouth was single, and the tongue and lower jaw showed no trace of duplication, in which respect this specimen resembled one already described (No. 848), and differed from what has been generally observed in this form of monstrosity. (Hist. des Anom. III. 200.) The cranium, having been prepared, is seen to be divided anteriorly into two portions, which are symmetrical; each has two frontal bones, two unguis, one nasal and intermaxillary, and upon the outside a well developed maxillary, but upon the inside this last is entirely wanting; the outer nasal cavity is perfect, but the inner is not so, there being a deficiency of bone between the intermaxillary and os unguis. At the bottom of the large common orbit are seen the two optic foramina about one-third of an inch apart; superiorly the orbit is mostly membranous, but inferiorly it is in part formed by an irregular, imperfectly developed, bony plate. The posterior sphenoid, where it is connected with the basilar, is double, this last and the whole occipital region being single and well formed. 1846. *Dr. J. B. S. Jackson.*

858—69. The following specimens may be grouped in one series.

858. A model of Aké, the well known Chinese monstrosity (Hist. des Anom. Pl. xviii. Fig. 4); sent to Dr. Reynolds by a gentleman in Canton, and with it a manuscript copy of Dr. John K. Mitchell's description of the individual as observed by himself; the manuscript is deposited with the specimen. Dr. M.'s description was published, with an engraving, in the Philadelphia Journ. of the Med. and Phys. Sciences, in 1821, and is, of course, much more to be relied upon than that of Dr.

Livingstone's account of the case which was sent to England from Canton, and has been published in the Catalogue of the Hunterian Museum, Dr. L. himself never having seen the individual. It is remarkable that Dr. M.'s description, which is so very full and satisfactory, is not mentioned in the Hunt. Catalogue, nor by St. Hilaire. *Dr. Edward Reynolds.*

859. A Kitten, preserved in spirit, and showing two pairs of extremities growing from about the epigastric region; the anterior are united by integument as far as the carpus, the paws are clubbed, and there are but four toes on each; the posterior extremities are more developed, and there is an anus and some appearance of genitals, but no tail.
860. A stuffed specimen, very similar to the last, except that the anterior extremities are not united.
861. A third specimen; preserved in spirit, and resembles No. 859, except that there is only one pair of supernumerary extremities, and these are the posterior.
862. A Chicken preserved in spirit, and having two supernumerary extremities growing from the back of the pelvis; they are not fully developed, and the thigh bones are united by integument. A similar specimen has also been sent to the Society by Dr. Jarvis, of Dorchester. 1840. *Dr. Robert W. Hooper.*
863. The skeleton of a Chicken, that resembled the last specimen; mounted. The supernumerary extremities have a very slender attachment to the coccyx upon the left side, but are tolerably developed; a small, irregular bone, which represents the pelvis, being connected with the upper extremity of the two femora. Otherwise, it is well developed. 1847. *Dr. D. H. Storer.*
864. A portion of the skeleton of a Fowl. Upon the right side there is an additional ischium, somewhat developed, and situated between the sacrum and the true ischium, with which last it is fused, the sacrum and coccyx being much inclined towards the left side. From this additional bone there arises an ex-

tremitry which is considerably and permanently distorted. The tibia is a short, thick, stout bone, about one inch in length, the femur and metatarsal bones being tolerably developed; the toes are five in number, and one of these is bifurcated. 1835.

*Dr. Winslow Lewis, Jr.*

865. Skeleton of a Chicken that lived three months; mounted. The left femur, which is formed by the union of two, is very broad, has two distinct trochanters, and terminates inferiorly in two extremities, one of which is sufficiently well developed. The supernumerary member has in the place of a tibia and fibula two bones, that look not unlike tibiæ, being largely and about equally developed, separate above, but soon becoming fused, and connected with the femur by two additional and distinct articulating surfaces; the metatarsal bone is short, slender, and very much bent upon itself, and beneath it there was during life a considerable callus, this division of the extremity being as much or more used in progression than the other; the whole terminates in three very imperfectly developed toes. In the pelvis there is some appearance of duplication upon the left side, but, otherwise, the skeleton is well formed, as were the internal organs, except that the intestine had four cæca, two of them being large, one small, and one of intermediate size. 1840. *Dr. J. B. S. Jackson.*

866. The fore-foot of an adult Pig; preserved in spirit. One of the small toes is normal, but in place of the other are two large toes, giving altogether the appearance of a double foot, the supernumerary, however, being less developed than the principal. Where the foot was cut off there are seen to be five metatarsal bones.

867. The hind feet of a young Pig; one has been dried, and the other prepared to show the condition of the bones, the malformation being apparently the same in both. In the dissected specimen, the two principal toes, and the small one upon the outside, are perfect in all their parts; upon the inside there are two other toes, nearly as large as the first two, and connected with the tarsus by a single large metatarsal bone; between these two feet, for so they appear to be, is a small un-

developed toe, that belongs rather to the supernumerary foot than to the principal. The tarsus has additional bones or rather cartilages in connection with the supernumerary metatarsal.

This specimen, with the following others, was purchased by subscription amongst the members of the Society, at the New England Museum:—Nos. 537, 636, 824, 825, 839, 840, 845, 851, 852, 854, 859, 860, 861, and 866.

868. A series to show the development of the supernumerary thumb so often observed in the domestic Fowl.

In the first specimen there is a very imperfectly developed additional phalanx, besides the terminal one, the nail only appearing externally. In the next, the first phalanx of the proper thumb bifurcates, the additional phalanges being well developed and directed upwards; these two specimens are mates, as are also the fourth and fifth. The third essentially resembles the second, the fusion at the bifurcation being more complete. In the fourth specimen the additional thumb is in all its parts fully developed, curved upwards, and situated directly above the principal. The fifth resembles the fourth. In all of these, excepting the fifth, the development of the bones has been fully shown by removing the soft parts from the under surface of the thumb. The last specimen consists of a set of bones, separated by maceration, and in which the bone that supported the two thumbs consists of a single broad piece. 1845.

869. A preparation to show the development of the bone in a supernumerary thumb; there are two phalanges, connected by fibrous substance, the first about two lines in diameter, the second nearly an inch in length, and supporting a well formed nail. It was attached to the integuments over the metacarpal bone of the thumb, and was removed as an incumbrance, the patient being a young mechanic. 1837.

*Dr. J. B. S. Jackson.*

870. A cast in plaster of the right hand of a little girl, showing a thumb with three phalanges. The thumb is long and slender, and reaches about as far forwards as the little finger. 1846.

*Dr. Benjamin E. Cotting, of Roxbury.*

871. Two Hen's eggs, united by a short thick band ; they are tolerably developed in regard to size, though there is only a trace of shell. *Boston Society of Natural History.*

872. A double Peach, preserved in spirit ; the two are fully developed, and united intimately, though to a small extent, near the common stem. *Dr. J. B. S. Jackson.*

873. A cast in plaster of two Apples, united like the above. *Dr. Henry I. Bowditch.*

874. A cast in plaster of two Cucumbers, that had a linear union throughout almost their entire length ; these two casts were taken by Dr. William E. Coale. *Dr. Charles Bertody.*

### III. MONSTROSITIES BY DISTORTION.

875. Cranium of a Fowl, showing a strong incurvation of the upper mandible to one side, as in No. 842.

*Mr. Charles K. Whipple.*

876. Cranium of a Canary bird, showing a similar deformity.

*Dr. William T. Parker.*

877. A Hen's egg, quite small, and contracted at one extremity, so as to resemble in form a certain kind of gourd ; shell for the most part well developed. 1844.

*Dr. Benjamin E. Cotting, of Roxbury.*

878. Deformity of the lower extremity ; removed at the hip-joint, and preserved in spirit. The knee appears to be dislocated, the head of the tibia resting upon the outside of the femur ; the leg, in the recent state, was strongly flexed upon the thigh, the foot very strongly flexed, and twisted so that its inner edge was in contact with the leg, and its sole with the thigh, the outer condyle being quite prominent, and forming the proper termination of the extremity.

From a child that was born with imperforate anus, and died on the fifth day, being otherwise well formed, except for some trifling deviations in the arteries. October, 1841.

*Dr. E. O. Phinney.*

879. Cranium of a six months fœtus ; mounted. There is great deformity of the vault, and such as may possibly have been caused by external pressure, the bones being compressed laterally, and the right parietal doubled upon itself ; the vertical diameter, on the other hand, is proportionately increased, and the whole occipital region much depressed. Otherwise the fœtus was well developed ; presented by the knees. The mother has aborted several times at the same period, and thinks she has a uterine tumor, though none has ever been discovered on examination. 1847. *Dr. Enoch Hale.*
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## XIV. PARASITES.

880. A jar containing a large number of lumbrici (*Asc. lumbricoides.*) The patient was a little girl, four years old, and had passed one hundred and twenty of these worms within the course of a few weeks, twenty being the greatest number passed at any one time. She lived almost wholly upon animal food ; appetite diminished, but general health sufficiently good. *Dr. D. H. Storer.*
881. Dissection of a male lumbricus. *Dr. Jeffries Wyman.*
882. Lumbricus from the gall-bladder of a man who died of acute dysentery. Nov. 1836. *Mass. Gen. Hospital.*
883. Intestinal worms (*Asc. marginata*, Lamarck) from a young dog. The animal was found in the road in a fit, and carried into the house of a physician, where he was kept under observation for three days and then drowned. The paroxysms frequently recurred, though lasting but a few minutes at a time ; they began with a twitching of the face, then the left side, and at last the whole body being affected ; after the convulsions he appeared for a time quite delirious. On the most careful examination of all the organs of the abdomen, thorax and head, no disease was discovered, but, about the middle of the small intestine, five worms were found coiled up in a knot, and

- measuring from three and a half to seven and a half inches in length. *Dr. Jeffries Wyman.*
884. A Guinea-worm, (*Filaria med.*) nine and a half inches in length; removed from the integuments of the abdomen, where it had caused much local inflammation. The patient was a sailor, and had been troubled by the worm since he was on the coast of Africa about a year before; he had also another removed from the foot. *Dr. Charles H. Stedman.*
885. A portion of the lung of a Porpoise (*Phoc. communis*), containing *Filaria*, great numbers being found in the air-passages, or in the fluid which had drained from them (No. 886.) They were generally about one inch and a half in length. *Ascarides* were also found in the stomach. The animal was harpooned off Nahant, and the organs were sent here for dissection by *Mr. William H. Johnson*, of Nahant.
886. *Filaria* from the air-tubes of a Porpoise (No. 885.)
887. Several worms, probably *Filaria*, from the peritoneal cavity of a Horse; they are about three and a half inches in length, quite attenuated at one extremity, blunt at the other, and without any appearance of papillæ. A similar specimen has been also presented by *Dr. H. I. Bowditch.*  
*Dr. Morrill Wyman*, of Cambridge.
888. A portion of the parietes of the abdomen of a Sculpin, in which were found a considerable number of worms, probably *Filaria*; they are half an inch or more in length, and were coiled up beneath the peritoneum, which has been removed to expose them, one being still covered by the membrane. 1845.  
*Dr. Jeffries Wyman.*
889. *Strongylus gigas*; six specimens from the kidney of a Mink (No. 598); length from nine to twenty-one inches.  
*Dr. Erasmus D. Miller*, of Dorchester.
890. Several parasites (*Echinorynchus gigas*) attached to the intestine of a Hog, with depressions in the mucous membrane

showing where others have been attached, and a thickening of the corresponding portion of the intestine externally.

*Dr. Jeffries Wyman.*

891. One of the parasites (No. 890,) in a separate phial; they are generally about five inches in length.

892. A portion of intestine from a Striped Bass (*Labrax lineatus*), with numerous Echinorynchi attached, several of them having perforated the parietes. 1845. *Dr. Jeffries Wyman.*

893-900. Eleven specimens of *Tænia solium* from the human subject are in the Cabinet, of which the following may be noticed.

893. The first is six feet in length. The patient was a gentleman, about twenty-five years of age, and had been in Canton for several years, when he began to pass fragments of the worm; this happened frequently, and also for a considerable time after his return to this country, when, under the use of turpentine, preceded by a rigid diet and an active cathartic, the worm was expelled, and he has passed none since, twenty months having now elapsed. 1843. *Dr. Charles G. Putnam.*

894. The second specimen is much broken, but the fragments altogether measure several feet in length. The joints are very regular, but vary much in size and form; some are quite remarkable for their shortness, and for the union between them being almost confined to the median line, as shown in a drawing by Dr. Wyman. The patient was a little girl, nine years old, who had been sick for about a year, having previously enjoyed good health; her symptoms were loss of flesh and strength, with an enlarged abdomen, and very strong appetite. Having taken a common cathartic, some joints of the worm came away; an active cathartic was then given, and the whole was expelled, when she at once regained her health. 1843. *Dr. James B. Forsyth, of Chelsea.*

895. The third specimen is remarkable for the great irregularity in the form of many of the joints, for having many of the lateral pores successively upon the same side, and for being the only

- one in the Cabinet from the human subject in which the head is to be seen; this last, as it appeared under the microscope, has been figured by Dr. Jeffries Wyman. The patient was a man about forty years of age, and the worm was expelled without medicine. 1843. *Dr. John Homans.*
896. A portion of the above specimen, showing the remarkable irregularity of some of the joints (Fig. 26.)
897. A fourth specimen, from a middle-aged woman who had been complaining for four or five years; discharged after a dose of turpentine; a few months afterwards she died of phthisis. *Dr. M. S. Perry.*
898. A fifth specimen, nearly thirty-two feet in length. *Dr. D. H. Storer.*
899. A portion of *Tænia solium* dried upon glass, to show the genital apparatus.
900. Several specimens of *Tænia* from a Porcupine (*Hystrix dorsata*.) They are mostly about one inch and a quarter in length; anterior extremity pointed, with a well marked head, but without any appearance of hooks; the posterior extremity being broad, thick and quite blunt, as shown in a drawing by Dr. Wyman. The joints are very short, and the pores are sometimes seen not merely upon the same side of several successive joints, but occasionally upon both sides or edges of the same joint. A few of the specimens are longer than the above, more uniformly narrow and thin, and have but very few lateral pores. This is the second instance in which Dr. W. has found a large collection of these parasites in the Porcupine. 1845. *Dr. Jeffries Wyman.*
901. A specimen of *Bothriocephalus*, or *Tænia lata*, as it is usually called. It is seven feet in length, and is about one-half of what was discharged. The patient was a healthy, middle-aged Englishman, and the case occurred during the last winter at Richmond, Va. The pores are seen upon the flat surface of the joints, and not upon the edges, as in the *tænia solium*;

and, a portion of the worm having been dried upon glass, the outline of the genital organs is very distinct. 1847.

*Dr. Jeffries Wyman.*

902. A portion of the above parasite dried upon glass.

903. A second specimen of *Bothryocephalus*, three feet in length, and from half a line to one line and a quarter in width; from an infant. The joints are very regular, except at one extremity, where they approach the triangular form, are very delicate, and but slightly connected, as shown in a drawing by Dr. Wyman. From a very healthy infant nineteen months old; it had been weaned about six months, and had had the usual diet from that time; the worm was discharged without medicine, its presence having never been suspected. 1842.

*Dr. Ezra Palmer, Jr.*

904. *Cysticercus cellulosæ*. From a woman about fifty years of age, who died of phthisis; a dissecting-room subject, at Richmond, Va. In the phial are contained a piece of muscle with the cyst in it; secondly a detached cyst, and thirdly one of the parasites removed from its cyst. Accompanying the specimen is a drawing by Dr. W. of the parasite, &c., as it appeared in the recent state under the microscope. About a dozen or fifteen of the cysts were found in the cellular membrane of the muscles and in the integuments, besides one which hung free from the inner surface of the dura mater near the crista galli. In the same subject there were also numerous specimens of *trichina spiralis*. 1845.

*Dr. Jeffries Wyman.*

905. *Cysticercus* from the mesentery of a Sheep. 1840.

*Dr. Jeffries Wyman.*

906. A *Linguatula* from the intestine of an African Serpent (*Cerastes* —) which was sent to the Soc. of Nat. History, by Dr. Thomas S. Savage, of Cape Palmas, the individual having been dissected by Dr. S. There were also sent several specimens of the parasite, all of them females, and from three and a half to four inches in length.

*Boston Society of Natural History.*

907. Linguatulæ from the inner surface of the lung of a South American Boa. There were altogether four or five; one of them, a female, was three and a half inches in length; the rest were males, and did not exceed one inch and a half. This and the last specimen have been figured and fully described by Dr. W. in the Journal of the Boston Soc. of Nat. History (Vol. V. No. 2 — 1845.) *Dr. Jeffries Wyman.*
908. Entozoa from the gall-ducts of a young East-Indian Elephant, that died in this city. They are of two kinds, the *Distoma hepaticum*, and a small species of *Ascaris*; immense numbers were found in the ducts, and of the ascarides, a few were found in the duodenum. In the same jar are several larvæ from the stomach and duodenum. There was ascites, with disease of the liver, and in the stomach near the pylorus a large, deep, chronic ulcer, of a circular form and perfectly defined. 1835. *Dr. J. B. S. Jackson.*
909. *Trichina spiralis*. A portion of one of the voluntary muscles has been picked apart, so as to form a thin extended sheet; having then been dried and varnished, it is seen to be filled with the cysts, and with the microscope the parasite itself may be shown. From a middle-aged man, a patient of Dr. M. S. Perry, who died of malignant disease of the abdomen. This case was published by Dr. Henry I. Bowditch, in a full paper upon the subject, and accompanied with drawings, in the Boston Med. and Surg. Journ., March 30, 1842. Several other instances have been observed here, and also in Richmond, Va., by Dr. Jeffries Wyman, and one deserves especial notice, in which Dr. W. found one or two of the parasites about the middle of the œsophagus.
910. Small crustacean parasites (*Chondracanthus*) from the mouth of the Whiting (*Merlucius albidus*); from Cape Cod. 1847. *Dr. Jeffries Wyman.*
911. Larvæ of the Bot-fly (*Æstrus equi*) from the stomach of a Horse. *Dr. Morrill Wyman*, of Cambridge.
912. Larvæ of the Bot-fly (*Æstrus ovis*) from the frontal sinuses of

a Sheep. Dr. W. has met with them frequently in this situation in the month of February, when preparing for his anatomical lectures at Richmond, Va. 1847.

*Dr. Jeffries Wyman.*

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## XV. MISCELLANEOUS SPECIMENS.

### 913. Chinese Paintings.

A collection of twenty-eight highly finished oil paintings, that were presented to the Society by Dr. Robert W. Hooper, April 14, 1845. They were executed by a native artist at the hospital in Canton, under the charge of Dr. Peter Parker, and represent various forms of external disease, but chiefly tumors; many of these are of great size, and this development of the diseased masses is one of the most striking features in the collection, as was shown in an article by Dr. Holmes in the Boston Med. and Surg. Journ., May 21, 1845. The healthy appearance of most of the subjects is also remarkable, for, as in Alibert's plates of the skin, the individual is represented as fully as the disease. A descriptive catalogue of most of the cases has also been presented to the Society with the paintings; copied from the Reports of the Hospital, which were published in the Chinese Repository.

914. Three drawings in water colors, admirably executed, and representing different views of a malignant tumor of immense size that formed about the shoulder. They were taken by a professed artist, Mr. J. R. Penniman, for Dr. John Homans, in whose practice the case occurred, and were presented by him to the Society, with a full history of the case.

The patient died in June, 1831, aged fifty-four years. In August, 1816, he fell, and broke the left humerus just below the shoulder joint. Union took place, but in the winter he began to have pain, and in the course of the following year a tumor appeared in the axilla. This tumor gradually increased, and in 1825 was as large as the head of a child of six months. In the autumn of 1829 the growth became more rapid; his health, which had previously been perfectly good, began to fail, and he gave up his business as a stage-driver,

which until that time he had pursued regularly ; in the spring, however, he resumed his occupation, and continued it until the autumn, from which time the enlargement of the tumor and the failure of his health went on rapidly. A few weeks before death, sloughing commenced, profuse discharge followed, with severe pain, and the tumor diminished greatly in size.

The tumor extended, as shown in the drawings, from the top of the shoulder nearly to the ilium, and from the anterior extremity of the ribs to the base of the scapula, the upper half of the humerus being also involved ; weighed sixty-two pounds, with the scapula and clavicle, after being dissected from the arm. "The only attachment to the body was by condensed cellular tissue ; the mass itself consisted mainly of a sort of cartilaginous substance, whilst other portions were very soft, and the whole was held together by fibrous membrane." 1844.

915. A collection of thirty-two casts in plaster, representing dislocations, fractures, deformities of the feet, and some other cases of external disease ; presented to the Society by Dr. Nathan R. Smith, of Baltimore, through his colleague, Dr. Joseph Roby, the original moulds having been made by Dr. S., March 23, 1846.

916. An adipose tumor, about three inches in diameter.

*Dr. A. L. Peirson, of Salem.*

917-8. Two other specimens of the same.

*Dr. S. D. Townsend.*

919. A large, glandular tumor, removed from the axilla. The patient was a lad, thirteen years of age, and otherwise quite healthy. The tumor had existed for a year, and weighed nearly two pounds after its removal, the skin being much discolored, with enlargement of the veins ; external surface lobulated, and internally it consisted of a firm, whitish, nearly uniform structure. The boy recovered. *Dr. S. D. Townsend.*

920. A "scirrhus tumor" removed from under the pectoral muscle. It is of a flattened, oval form, about the size of a small orange, somewhat irregular upon the surface, and having a

uniform, dense, whitish structure, as shown on incision. The patient was a middle-aged female, and had been aware of the existence of the tumor for four months previously to the operation, during which time it had grown rapidly, but without pain. In the operation it was readily detached, the pectoral muscle not being involved; no disease existed in the breasts, but there was some enlargement of the axillary glands.

*Dr. George Hayward.*

921. A cellular tumor removed by Dr. L.; the patient was a female, thirty-four years of age, and did well, though in the seventh month of pregnancy when the operation was performed. The mass hung pendulous from behind the knee, and weighed about thirteen pounds; it had been forming for about eleven years, and had begun to ulcerate, but was not painful. Internally it is seen to consist of a coarse, cellular structure, some of the cells being as large as a hazel-nut, and filled, when recent, with a thin, ropy fluid.

*Dr. Winslow Lewis, Jr.*

922. An encysted tumor from the scalp; size of an English walnut.

*Dr. S. D. Townsend.*

923. Four encysted tumors from the scalp; from the size of a pea to that of a nutmeg.

*Dr. S. D. Townsend.*

924. A cyst removed from the outer edge of the orbit. The patient was a young woman, and the tumor had been observed in infancy; gradually increased in size, but for the last three years had grown more rapidly. When removed, it was about the size of a filbert, and contained an oily fluid, in which were short, stiff hairs, resembling those of the eyebrow. The cyst has been dried, and many of the hairs are seen to adhere to the interior of the cyst, though they are mostly free. 1843.

*Dr. Robert W. Hooper.*

925. Hair discharged from the umbilicus. The patient, a middle-aged female, had had pain and tenderness in the part for nearly two years, and for some months a fistulous opening; two other small pellets of hair were discharged about the same time, and the opening then closed. *Dr. Edward Reynolds.*

926. Cancerous disease of the thigh, removed by excision. The patient was a female, about sixty years of age. For ten years or more she had had a small, indolent, subcutaneous tumor, that for the last two years had become painful, and resulted, at last, in a deep, cancerous ulceration about an inch in diameter. The wound healed in about a week, but the disease reappeared in the same place, and the patient died six weeks after the operation, the inguinal glands having become diseased, and also those in the abdomen. *Dr. M. S. Perry.*

927. Enlargement, with induration of the thymus gland. The patient was a stout, fleshy woman, sixty years of age, and had suffered somewhat from dyspnoea with febrile symptoms for three or four months before death.

*Dr. Winslow Lewis, Jr.*

928. A Frog, which was found at Mount Auburn, in good condition, and quite active in all its motions. It had lost the greater part of one of the posterior extremities, and shows a most perfectly formed stump. Another was some time afterwards found by Dr. W., which had lost the leg below the knee, the stump in this case being equally perfect.

*Dr. Jeffries Wyman.*

929. A Frog, showing the entire loss of one of the anterior extremities; from the gardens at Versailles. 1844.

*Dr. Jeffries Wyman.*

930. A cast in plaster of the stump after a sloughing off of the leg below the knee. This case occurred about six years since in a miserable Irish family, and during a severely cold winter. The patient, a little girl, eleven years of age, was attacked with purpura, and the effusion of blood being very extensive, hemiplegia came on, and the paralyzed limb mortified, having been frozen, as it was supposed, without the knowledge of the child; in a year or more it was separated by the natural processes. A conspicuous object in the cast is an enlarged bursa over the patella, but this has since disappeared. 1842.

*Dr. William E. Coale.*

931. A small Lizard (*Anolis*—Cuv.) from Surinam, showing a bifid condition of the tail about midway ; the two form a very acute angle, and the additional one, which seems to contain no bone, is rather shorter and smaller than the principal. This was the result probably of a wound, and the tendency which there is in these reptiles to reproduce the part when lost by accident. 1839. *Boston Society of Natural History.*
932. A piece of bone from the fat about the kidney of a Hog ; it is five inches in length, from nine to fifteen lines in width, and from two to three lines in thickness ; the surfaces are smooth, but the edges are quite irregular, and the structure is rather light. 1843. *Dr. Nathaniel B. Shurtleff.*
933. A rough, three-cornered piece of stone, about half an inch in diameter, removed from the integuments beneath the jaw. The patient was a laboring man, and had been blown up about two years before, whilst blasting rocks ; several pieces of stone were driven into the flesh, and all of them had been removed excepting the one in the neck, which he had allowed to remain, as it never troubled him, the parts about it being much condensed.
934. A phial, containing several pieces of bone that, with a great many more, were said to have been discharged from the nose and ear. The pretended sufferer was an intelligent and interesting little girl, eleven years of age, and the deception was carried on for several months, while under various methods of treatment.
935. Hands of a Guanche Indian, from the Isle of Teneriffe ; they are clasped together, and dried in this position, with the flesh on, the bones of the fore-arm being preserved in connection. The size is not remarkable. *Boston Society of Natural History.*
936. Fore-arm and hand of an Egyptian Mummy ; the flesh is dried on, and remarkably well preserved ; the subject was a child. Also the fore-arm of an older subject, in the same condition. *Francis C. Lowell, Esq.*

## APPENDIX.

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Of the following specimens, four were accidentally omitted in preparing the Catalogue, and the rest were received too late for insertion in their proper place.

937. Extensive and deep absorption of the bodies of three of the dorsal vertebræ, upon the left side ; the result of an aneurism. A larger sac existed at the arch of the aorta, that had destroyed the upper portion of the sternum, and formed a prominent tumor externally, when first seen more than two years and a half before death. The patient was a laboring man, forty-four years of age, and was in the habit of wearing a copper plate over the tumor, to protect it from external injury when at work ; he was once exhibited to the Society, and his case was published in detail in the *New England Quarterly Journ. of Med. and Surg.*, Oct. 1842. *Dr. M. S. Perry.*

938. An old and extensive fracture of the crest of the ilium ; the union is strong and regular, but there is a considerable deposit of new bone upon both surfaces. From an Irish laborer, who had been at work upon one of the railroads, and died probably in a drunken affray. 1847. *Mr. Calvin Ellis.*

939. Bony ankylosis of the hip-joint, the femur being bent to about a right angle with the trunk. The union is strong, though a considerable opening is seen through the ischium. From a middle-aged man, who had an attack of apoplexy in the street in New York ; was carried into a Hospital, and died soon after entrance. Presented to the Society, June, 1847, by *Dr. William T. Thurston*, of St. Kitts, W. I.

940. Extensive caries of the knee-joint, with an abundant deposit of new bone about the articular surface of the femur. The following is an abstract of a full history of the case, that was given by Mr. Edwin Leigh, a student of medicine. The patient was a carpenter, fifty-three years of age; general health good, and habits always temperate. In the year 1822 he wounded the right knee-joint with an axe, upon the inside of the patella, and severe inflammation followed, which confined him for three months or more. For nearly a year, the knee remained permanently flexed, but, after an accidental fall, by which the adhesions seemed to have been broken up, the motions became very much more free; it was, however, occasionally troublesome, and the patient was always more or less lame, there being much deformity of the joint, and in the situation of the wound a hard tumor as large as "half an orange."

March 16, 1847, the same knee was again cut in the same place with a broad-axe. The wound bled freely, was tightly bandaged, and the patient walked home, half a mile. His physician, Dr. Charles F. Chaplin, of Cambridgeport, being called to visit him, passed a probe through a thick mass of condensed cellular tissue, and into the joint. The accident was followed at once by very severe inflammation of the joint and neighboring soft parts; the suppuration was abundant, and he became so exceedingly reduced that it was thought hardly possible for him to survive an amputation. On the 13th of June, however, the limb was removed by Dr. Lewis, at the upper third of the thigh, the patient having first been put under the influence of ether; immediately after the operation he began to rally, and from that time rapidly improved, so that about the middle of July he was able to go out, and his health is now fully restored.

On dissection of the limb, which for one or two days retained the odor of the ether, very extensive abscesses were found above the knee, having upon the inner surface a dark, gangrenous appearance, and communicating freely with the joint; below the knee, they were less extensive. The inside of the joint, for the most part, resembled the abscesses in its dark, shreddy appearance, the bone being denuded and rough, and only a trace of cartilage remaining. Between the patella and the anterior portion of the femur, however, there were old

cellular adhesions, probably the result of the first injury, and to this part of the joint the recent inflammation did not extend, the outline of the two portions being quite marked in the prepared specimen. Sept. 1, 1847. *Dr. Winslow Lewis, Jr.*

941. Section of an ankylosed knee-joint. (See next specimen.)  
*Dr. Charles F. Heywood.*

942. Disease of the tibia, the result of necrosis. The patient was a physician, fifty years of age, and entered the Massachusetts General Hospital May 31, 1847. When he was ten years old a large abscess formed in consequence of an injury of the leg; in two months the bone began to exfoliate, and in the course of a year he thinks the whole of the tibia came away, excepting the epiphyses. In five or six years the openings closed, and he had a useful limb, except for an ankylosis of the knee and ankle-joints, his general health being good. Four years ago, as he stated on admission, the surface was abraded just above the ankle, and an ulcer formed, which never afterwards healed; fourteen months ago, dead bone began to be discharged from the ulcerated surface, and for the last eight months the leg had been exceedingly painful with much loss of flesh and strength.

The above is an abstract of the case from the records of the hospital. On examination, a large ulcer was found to occupy the lower anterior half of the leg, the bone being exposed, and the surface surrounded by a peculiar fungous growth. On the 5th of June the thigh was amputated by Dr. S. D. Townsend, and on the 4th of July the patient died, having gradually sunk from the time of the operation. The stump had healed perfectly, but there was found, on dissection, a separation of the periosteum about the end of the bone, with some small abscesses, and an inflammation of the femoral vein.

The bones having been prepared by Dr. Heywood, the house-surgeon of the hospital, the tibia is seen to be much enlarged, and its lower portion occupied by a large and very irregular cavity, the structure of the bone being much altered. The lower extremity of the fibula, and the astragalus and os calcis are firmly ankylosed with the tibia. Complete bony ankylosis of the knee-joint also existed, except for the central

opening which so often exists; and, through this opening a longitudinal section of the bones has been made, the tibia having first been sawed across below the joint.

*Dr. Charles F. Heywood.*

943. Melanosis of the eye (Fig. 36.) An account of this case, and of another of colloid tumor of the orbit, was published by Dr. Bethune, with remarks, in the Boston Med. and Surg. Journal, July 28, 1847; it was accompanied with a lithographic drawing of the specimen, and, by the permission of Dr. B., the stone has been used for the present volume.

The following is an abstract of the case: Mrs. G., forty-three years of age, entered the Massachusetts Eye and Ear Infirmary, June 9, 1847, with disease of the right eye. In the autumn of 1842, after an exposure, she began to have pain and redness in the eye, with gradual loss of sight, which at the end of three months, became total. Pain occasionally recurred, and at one time the operation for cataract was performed, this being followed by severe inflammation, which never entirely subsided. About eight or nine months before her admission she perceived a "sore place" in the centre of the ball, and a few months afterwards the eye began to project at this point, and the projection constantly increased from that time; during the last winter there were frequent darting pains through the eye. On admission, the anterior half of the globe projected, in the form of an irregular fungous mass, to the extent of half an inch through the lids; in front, it was of a cartilaginous hardness, and of a mixed white and red color; behind this the color was red and black, and still further back there was seen a small mass, which had a livid tint, and was nearly black; the globe was much injected, but not enlarged, and a sanious discharge exuded from the surface. On the 18th of June the organ was removed, and on the 20th of July the patient was doing quite well.

The general appearance of the eye is well shown in Fig. 36. The interior of the globe is filled with a dark brown, moderately firm substance, and the sclerotic coat being traceable to a considerable extent, there is seen externally to it a thick mass, which has almost a scirrhus hardness, and is of a whitish

color, with some intermixture of brown; the optic nerve is much enlarged, and similarly diseased.

*Dr. George A. Bethune.*

944. Change of color of the hair. From an old gentleman, in his eighty-sixth year. For a long time his hair had been perfectly white, as shown in the smallest of two locks that have been preserved. His health having been failing for some time, it was observed about a month before his death that some of his hairs had turned black in their whole length; of this change there is a specimen in the largest lock. Behind the ears, on each side, was a lock that was entirely black, but elsewhere the white and black hairs were mingled, as in the specimen. The change occurred within a very few days, and within a week of this time the eyes changed from a blue grey to a dark grey color, this last being, it was said, their natural color when he was a child. 1842.

*Dr. James Jackson.*

945. Imperforation of the small intestine (Fig. 29.) The patient was a finely developed infant, and lived for three days, vomiting most of the time; the case occurred in the practice of Dr. George Hubbard. For the first thirty-seven inches the intestine was greatly distended, measuring in some parts, on being inflated, one inch and a quarter in diameter, and containing a considerable quantity of brownish red liquid, but very little if any trace of mucus or bile; it then terminated abruptly in a cul de sac. Below this, the small intestine was directly continuous with the dilated portion, measured seventy-two inches in length, and was about two and a half lines in diameter when distended. The large intestine measured twenty-one inches, and from three to four lines in diameter; both of these portions were filled with thick mucus, which was generally colorless, but in many parts had a decidedly yellow tinge. Six or seven inches below the imperforation there adhered to the intestine a reddish fleshy body, somewhat larger than a pea, and having upon the surface a cretaceous deposit such as was found upon the diaphragm (No. 946.) Otherwise, the organs were well formed. In the preparation, a portion of the intestine, having been distended and dried, has been cut open to show the imperforation. 1847.

946. A cretaceous deposit from the peritoneal surface of a new born infant (No. 945.) It appeared as a very conspicuous object upon the under surface of the diaphragm, and, with one exception, which has been referred to in connection with the last specimen, it was found in no other part. This deposit consisted of a number of opaque, white, irregular crusts, the largest being about two lines in diameter, and all of them connected with the peritoneum by a very delicate membrane. One of the crusts having been examined by Dr. John Bacon, Jr., was found to be uncrystallized, and to consist of about equal parts of the carbonate and phosphate of lime. In the preparation, the peritoneum has been stripped off from the diaphragm, and dried upon a black board; a small portion of intestine showing the fleshy body above referred to, with the cretaceous deposit, has also been preserved.

947. A deposit of the phosphate of ammonia and magnesia upon the peritoneal surface, the preparation consisting of a portion of the membrane, which has been stripped off and dried. From a dissecting-room subject; a middle-aged man, who, from the appearance of the intestines, must have died about the fifth or sixth week of typhoid fever. On opening the abdomen, the viscera seemed to be almost universally, though slightly adherent, and, on separating them, the surface was at once observed to be roughened, like fine sand-paper.

A portion of this membrane was sent to Dr. John Bacon, Jr., and the following is the result of his examination. The deposit appears in the form of white, and firmly adherent grains. Under the microscope, it is seen to consist partly of isolated prismatic crystals scattered over the surface, the largest not exceeding the one-hundredth of an inch in diameter; they are semi-transparent, and become colored in polarized light, the faces being considerably modified, and not well defined, and the forms very similar to those in which the triple phosphate occurs. There are also seen little masses, composed of radiating acicular crystals; these are more opaque, a few being entirely so, and showing no crystalline structure. The two forms of deposit agree in the reactions which they afford, and consist of the phosphate of ammonia and magnesia, as in the cases reported by Dr. Robert Harrison, in the Dublin

Journal, for May, 1836. (Am. Journ. Med. Science, Vol. XX. p. 207.)

No. 502 was from the same subject.

948. Encephaloid disease of the testicle. The patient was a perfectly healthy looking infant, aged three months, and had no hereditary tendency to carcinoma, so far as could be ascertained. When it was eight days old, the mother noticed an enlargement of the organ, and from that time it has been increasing in size but without any pain. August 7, 1847, it entered the hospital, and on the 11th the organ was removed by Dr. Henry J. Bigelow. A few weeks previously it had been punctured, and discharged, by report, blood and water. The sense of fluctuation was very strongly marked, and after its admission into the hospital, the growth was considerable, and the surface became discolored, which it had not been before. The organ was greatly enlarged, measuring, after its removal, two and a quarter by one and a half inches; and presented a fair specimen of encephaloid disease; cord healthy.

949. A hen's egg, about the size of a small olive; it is well formed, and the shell is fully developed, but of the yolk there was only a trace. 1845. *Dr. Henry J. Bigelow.*

950. The cranium and trunk of a malformed fœtus; mounted. The cranium differs from any of those already described; the frontal, parietal and occipital bones are very imperfectly developed, but, instead of flaring outwards, they rise perpendicularly from the base of the skull, and give to the cavity a horse-shoe form; the posterior portion of the occiput consisting of two pieces which are widely separated. The trunk is preserved on account of a strong lateral curvature of the spine, and a narrowing of the right side of the thorax, several of the last ribs upon this side lying in close contact with the spine; the sixth, seventh and eighth ribs are fused, the second wants its cartilage, and the sternum, which is very short, is connected with the first three ribs only. Upon the left side the cavity of the thorax is well developed, and the sternum is connected with the usual number of ribs. The skeleton was otherwise well formed, and the extremities were therefore removed.

In the recent state, the fœtus was sufficiently developed for the age. The cavity of the cranium was entirely open, and contained a small quantity of brain, from the base of which several of the nerves were traced. The parietes of the abdomen were almost entirely wanting, and to some extent those of the thorax; the liver, stomach, small and large intestines, kidneys and left testicle lying completely exposed. The heart was covered only by its pericardium. The whole peritoneal surface and the left pleural cavity were inflamed, and the lung much compressed. There was fissure of the uvula, as in so many of the acephalous fœtuses; the gall-bladder and ducts contained a very little colorless secretion; the renal capsules were nearly or quite as large as in a well-formed fœtus; the left umbilical artery was wanting; organs otherwise not remarkable.

The mother was a respectable, young married woman, and this was her first child; no cause assigned for monstrosity. Labor occurred at about the eighth month, and was easy; head presented; quantity of liquor amnii large; the cord was only a few inches in length, doubled upon itself and adherent, and broke in the delivery; placenta exceedingly large. Child still-born, though the motions had been felt, as so often happens, only a few hours before. Sex male. 1847.

*Dr. Asa B. Snow.*

951. Tuberculous disease of the spinal marrow. It was situated opposite the sixth cervical vertebra, and involved almost the entire substance of the organ at that part, forming an opaque, yellowish, solid, well defined and uniform mass about as large as the top of the little finger; spinal marrow somewhat enlarged at the seat of disease, and a little softened just above and below it, but elsewhere quite healthy. The membranes, also, were healthy, except for some thickening of the dura mater at the upper part. In the preparation a portion of the organ is shown, cut open longitudinally. In the brain there was a copious effusion of serum, with complete softening of the septum. Extensive tuberculous disease was found in both lungs and in the intestines, besides similar disease in the prostate gland, and in the kidneys.

The patient was an Irish laborer, forty-two years of age, and

died at the Massachusetts General Hospital, Sept. 25, 1842. Health quite good previously to the last year, and since then no local trouble except a disease of the ankle joint. The symptoms of spinal disease came on about three and a half months before death, and, when examined on the 13th of August, were as follows: diminished sensation, with hardly a trace of voluntary motion in the lower extremities, the upper being very much less affected; very frequent and involuntary contractions of the right lower extremity, tending to draw the limb up into a strongly flexed position, and attended with very severe pain; some contractions also of the left lower extremity, but without pain. Even on moving the bed-clothes, the muscles of the lower extremities would be strongly excited, and, on attempting to straighten them when they were drawn up, his suffering was very great. In the upper extremities these spasms were very much less. The bladder was completely paralyzed, so that the catheter had been used daily for the last three weeks. These symptoms continued with but little change until his death, the spasms being on one occasion so violent that the patient was fairly jerked out of bed, and fell upon the floor, though fortunately with but little injury. He suffered much also from a morbid sensibility, and from neuralgic pains in the right lower extremity, passing up into the abdomen. Respiration was carried on by the diaphragm, the intercostal muscles being paralyzed. The catheter was used until the last month, after which the urine became involuntary; the dejections, also, were for the most part involuntary, whenever procured, the bowels being very costive. The spine was often examined, but the patient scarcely ever allowed any pain or tenderness there, neither was there any trouble in the head worth mentioning. When first seen his general aspect was sufficiently well, but as the disease advanced, he became exceedingly emaciated, and for some time before death was very much sunken, with sloughs about the sacrum. As to his pulmonary disease, he had no symptoms that led to a suspicion of it; there was occasionally some dyspnoea, but, as it was generally accompanied with a feeling as of a cord about the lower part of the chest, it was attributed to the paralysis; the nurse, on being questioned after the death of the patient, mentioned an occasional, very slight cough during the last few days, but never before.

952. The seventh cervical vertebra, from which the spinous process was broken off, and removed by an operation two years and three months before death; for the history of the case, see specimen No. 141. From the time the above history was given, the power of motion somewhat increased, and the cramps diminished, but without any other change in the condition of the patient, until the last fortnight, when he was attacked with diarrhœa, of which he died on the 19th of September. On dissection, the space left in the canal by the removal of the spinous process was found to be filled by dense fibrous substance; the theca adhered posteriorly for a small extent to the vertebræ, and internally to the arachnoid membrane, by slight, filiform attachments; there was also some serous effusion, but otherwise the membranes were healthy. The spinal marrow, having been removed to the extent of several inches, appeared healthy, except just at the seat of injury, where there was found, in its centre, a cavity about the size of a pea, and filled with serum, the surrounding substance being completely disorganized. The vertebra is seen, in the preparation, to be uninjured, except for the loss of its spinous process and a portion of the laminæ, the upper half of the ring being entire. 1847. *Dr. John B. Walker.*

953. Indian Skull; dug up, with a considerable part of the skeleton, in making an excavation near the city for the Brookline branch of the Worcester railroad, and presented to the Society, Sept. 27, 1847, by *Dr. H. B. Inches.*

954. A calculus from a Neat's tongue; of a regular cylindrical form, with rounded ends, white, slightly roughened upon the surface, very heavy, and as compact as the hardest marble. It is one inch and two thirds in length, three fourths of an inch in diameter, and, a portion having been removed by Dr. M. Gay for analysis, was found to consist mostly of the carbonate of lime. 1847. *Dr. James W. Stone.*



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- Uterine Hydatids,* 753-4.

- Uterus.* Relations to the other pelvic organs, 649; imperfect development, 819; consists of three cavities, that open into the bladder, 773; divided by a septum throughout, 650; fundus divided, 718; bilobated, 651, with other malformations, 652. Gravid at an early period, 709, 729; third month, 710; full period, 717. Anatomy of the decidua, 709; 729. Rupture, 718-9, 805. Sloughing of the inner surface, after a tedious labor, 720; of the fundus, from a retention of the placenta, 748. Hernia, 652; prolapsus, 656; inversion, 653; polypus, 654-5, 718. Fibrous tumors, 657-63; injected, and shows the enlargement of the blood-vessels, 657; development of the muscular structure, 660; disorganization, 659-60; ossification, 661-2; cause of abortion, 659. Malignant disease, 663-4, 675.
- Vagina.* Absence of, 652, 457, 802; longitudinal septum, 650-1; band across the outlet, 669; foreign bodies from, 670-1; elephantiasis of the external organs, 672-4; ulceration, opening into the rectum, 519.
- Veins.* Absence of valves in the acephalus, 763, 757; left subclavian and jugular open into the right auricle separately from the upper vena cava, 457. Inflammation, 377; inferior vena cava distended by fibrin, 378; iliac vein, after recovery from inflammation, 379; phlebolites, 380.
- Vertebrae.* Anatomy, 9, 19; transverse process developed to represent a rib, 844; spinal column in the acephalus, 759, 762, in the acephalous fœtus, 766-74, 775, 776-81, 783-8, 789-95, and in spina bifida, 797-9, 801, 847; fissure of the bodies of the vertebræ, 780-1; fusion of two spinal columns in a double monstrosity, 845, 847, 849-50. Fracture of the cervical vertebræ, 136-7; dorsal, 138, 140, 142-3; lumbar, 139; spinous process removed by an operation, 952; partial recovery, 952, 142-3; formation of urinary calculi, 142-3; dislocation, without fracture, 135; obscure injury, 144. Caries without curvature, 112, 113, 124-5, 128, 937, the two last being the result of aneurism; with curvature, 116-19; intervertebral substance primarily affected, 117; a second invasion of caries, 117; opening of a fistula into the intestine, 117; recovery, with complete ankylosis, 114, 120-1; occurrence in a case of spina bifida, 799; symptoms of phthisis in case of extensive caries, 115; lateral curvature of the spine of a pickerel, from an absorption of one of the vertebræ, 123. Atlas separated into two lateral halves, 126; separation of the wings from the body of a lumbar vertebra, 127. Exostosis from the edges of the vertebræ, resulting in ankylosis, 130-3.
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## EXPLANATION OF THE FIGURES.

- Fig. 1. Pl. I. No. 329. Foramen ovale open in the adult.
- " 2. Pl. I. No. 330. The same.
- " 3. Pl. I. No. 331. The same.
- " 4. Pl. III. No. 759. Skeleton of a monstrosity (acephalus.)
- " 5. Pl. III. No. 766. Skeleton of an acephalous fœtus; *a. a.* the frontal bones; *b. b.* the posterior portions of the occiput.
- " 6. Pl. III. No. 775. The posterior portion of the occiput of an acephalous fœtus.
- " 7. Pl. IX. No. 844. Lower jaw of a double lamb, showing additional alveoli and teeth beneath the symphysis.
- " 8. Pl. III. No. 780. Spine of an acephalous fœtus; *a. a.* a fissure through the bodies of the cervical vertebræ; *b.* an additional wing upon the body of the eleventh dorsal vertebra.
- " 9. Pl. V. No. 781. Skeleton of an acephalous fœtus; *a. a.* rudimentary parietal bones.
- " 9'. Pl. V. No. 781. A front view of the upper portion of the spine, showing an extensive fissure through the bodies of the vertebræ; *a.* the central opening; *b.* union of the body of the third cervical vertebra with that of the seventh dorsal, upon the left side; *c.* union of the bodies of the second, third, fourth and fifth cervical vertebræ with that of the eighth dorsal upon the right side.
- " 10. Pl. IV. No. 783. Skeleton of an acephalous fœtus; posterior view; *a. a.* the posterior portions of the occipital bone; *b. b.* the parietals.
- " 11. Pl. IV. No. 783. A lateral view of the skeleton last referred to; *a.* the posterior portion of the occipital, and *b.* the parietal bone.
- " 12. Pl. IV. No. 784. Skeleton of an acephalous fœtus; *a. a.* the parietal bones; *b. b.* the posterior portions of the occiput; *c. c.* the frontal bones.
- " 13. Pl. VI. No. 785. External view of an acephalous fœtus, the brain being developed, but situated outside of the cranial cavity.
- " 14. Pl. VII. No. 786. A posterior view of the skeleton of the monstrosity last referred to; *a. a.* the frontal, and *b. b.* the parietal bones; *c. c.* the posterior portions of the occiput; *d.* the temporal, and *e.* the styloid process of the temporal bone; *f.* the malar, *g.* the nasal, *h.* the ungual, *i.* the superior maxillary, and *j.* the inferior maxillary bones; *k.* an additional wing connected with the ninth dorsal vertebra.
- " 15. Pl. VII. No. 786. A lateral view of the skeleton of the monstrosity last referred to; *l.* a fusion of the wings of the cervical vertebræ; *m. m.* the wings, and *n. n.* the bodies of the vertebræ. The other letters correspond with those in the last figure.
- " 16. Pl. V. No. 788. Skeleton of an acephalous fœtus; *a.* the frontal, and *b.* the parietal bones; *c.* the posterior portion of the occiput.
- " 17. Pl. V. No. 788. Fusion, with irregular development of three of the ribs, from the skeleton last referred to.
- " 18. Pl. VIII. No. 793. Cranium of an acephalous fœtus; *a.* the posterior portion of the occiput; *b.* the frontal, and *c.* the parietal bones.
- " 19. Pl. VIII. No. 808. Cranium of a monstrosity.
- " 20. Pl. VIII. No. 812. Cranium of a monstrous calf.
- " 21. Pl. VIII. No. 837. Base of the skull, with a portion of the skeleton of a double fœtus.
- " 22. Pl. X. No. 836. Stomach and portion of the intestine of the double fœtus last referred to.
- " 23. Pl. IX. No. 849. A double fish.

- Fig. 24. Pl. X. No. 846. A portion of the intestine of a double pig.  
 " 25. Pl. X. No. 850. Alimentary canal of a double fœtus.  
 " 26. Pl. I. No. 896. *Tænia sol.* showing a great irregularity of the joints.  
 " 27. Pl. IX. No. 826. A blighted fœtus.  
 " 28. Pl. IX. No. 827. A second blighted fœtus.  
 " 29. Pl. I. No. 945. Imperforation of the small intestine.  
 " 30. Pl. I. No. 612. Urinary calculus formed upon a quill.  
 " 31. Pl. II. No. 770. Sketch of an acephalous fœtus; front view.  
 " 32. Pl. II. No. 770. A side view of the same.  
 " 33. Pl. X. No. 845. Fusion of the scapulæ of a double fœtus. 33'. Another view of the same.  
 " 34. Pl. X. No. 845. Fusion of two stomachs in a double pig.

Figures 7. 23. 30. 31. and 32. it should be remarked, have been added since the text was prepared for the press, and the figure of specimen No. 943, which it was intended to introduce, has been omitted.

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 ERRATA.

Page 214, 19th line from top; for "bladder," read "vagina."

" 3, 9th line from bottom, for "frontal," read parietal."

Page 1, 8th line from bottom, for *an intermaxillary* read *a maxillary*.

" 9, last line, for *are* read *were*.

" 12, 8th line from the top, for 109 read 120.

" 37, 14th line from the top, for III. read IV. ; and, upon the 45th page, for IV. read V.

" 66, 7th line from the top, for *anchyloted* read *anchylosed*.

" 216, 9th line from the top, for 509 read 507.

" 258, 19th line from the bottom, for 10 read 9'.

" 261, 3d line from the bottom, for 787 read 786.

" 263, and 266, for 254 read 260.

" 269, 12th and 21st line from the bottom, omit (No. 789.)

" 285, 2d line from the bottom, for 810 read 809 ; and on the 286th page, for 810, 812 and 811, read 809, 811 and 810.

" 302, last line, for 23 read 7.

" 305, 11th line from the bottom, for *mounted* read *not mounted*.

" 309, 17th line from the top, for 26 read 25.

Fig. 1.

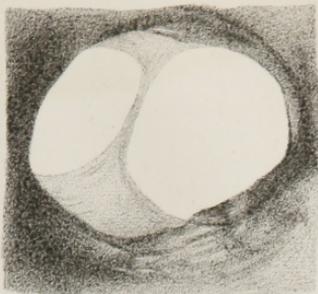


Fig. 3.

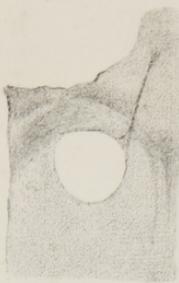


Fig. 2.



Fig. 29.



Fig. 30.

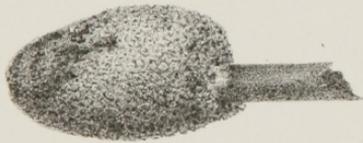


Fig. 26.





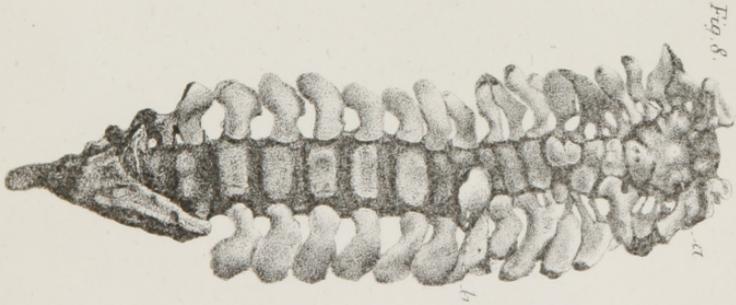
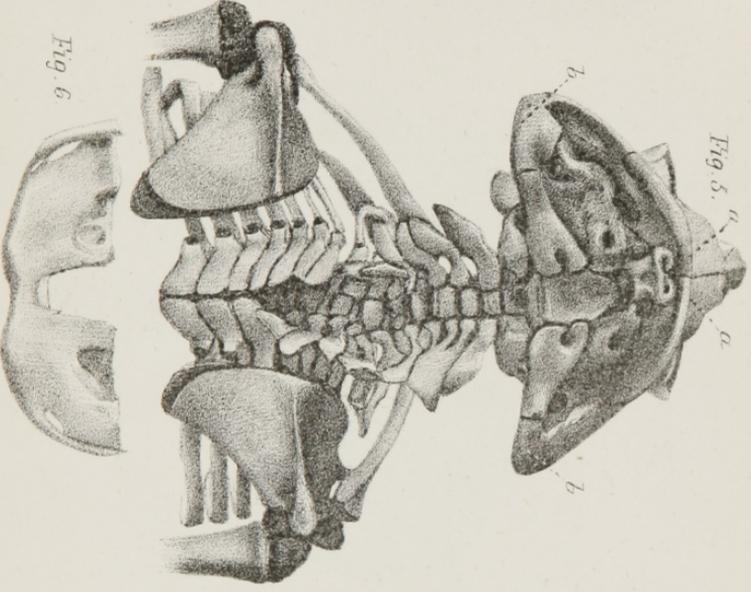
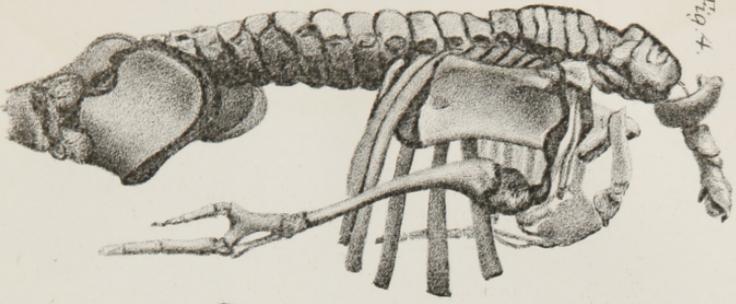
Fig. 32.



Fig. 31.









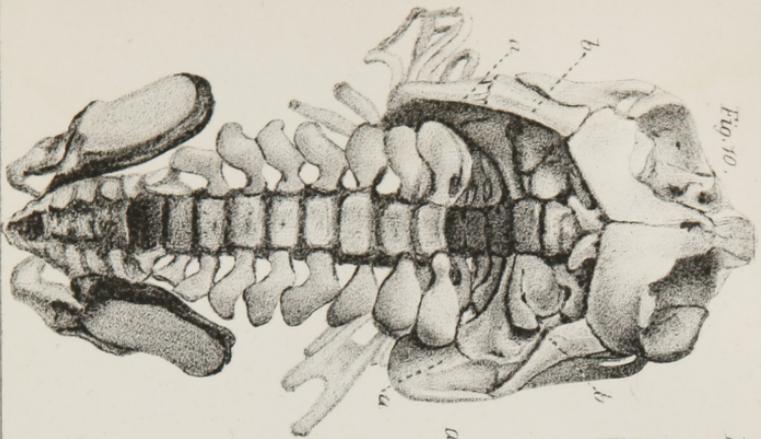


Fig. 10.

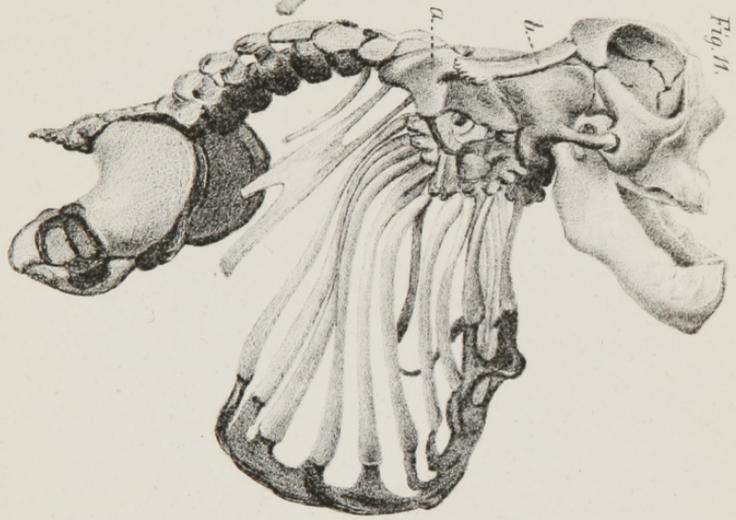


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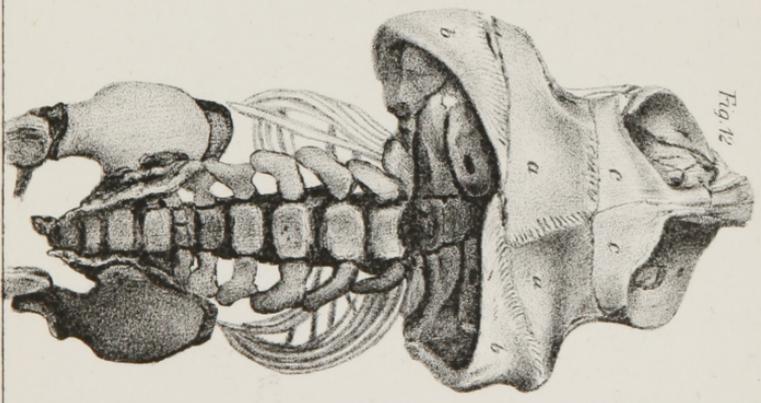


Fig. 12.

Drawn by Sharp, Pierce & Co Boston.



Fig. 16.

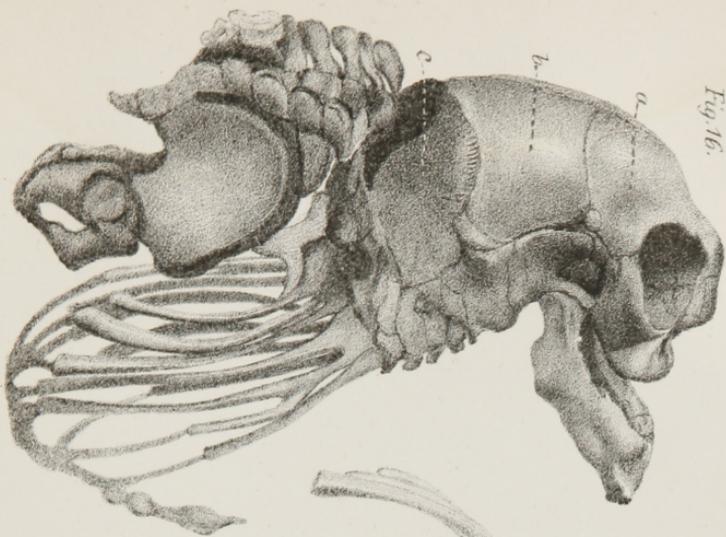


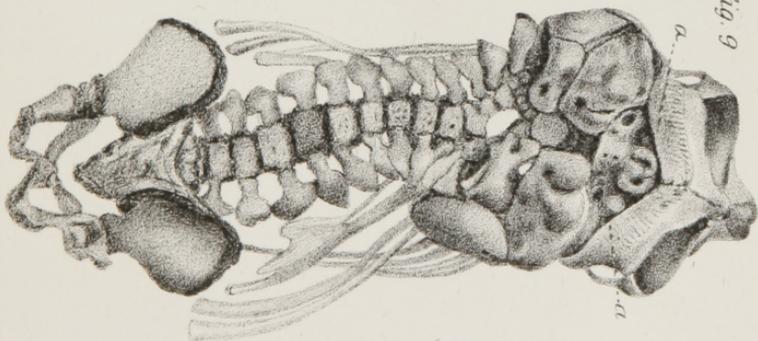
Fig. 17.



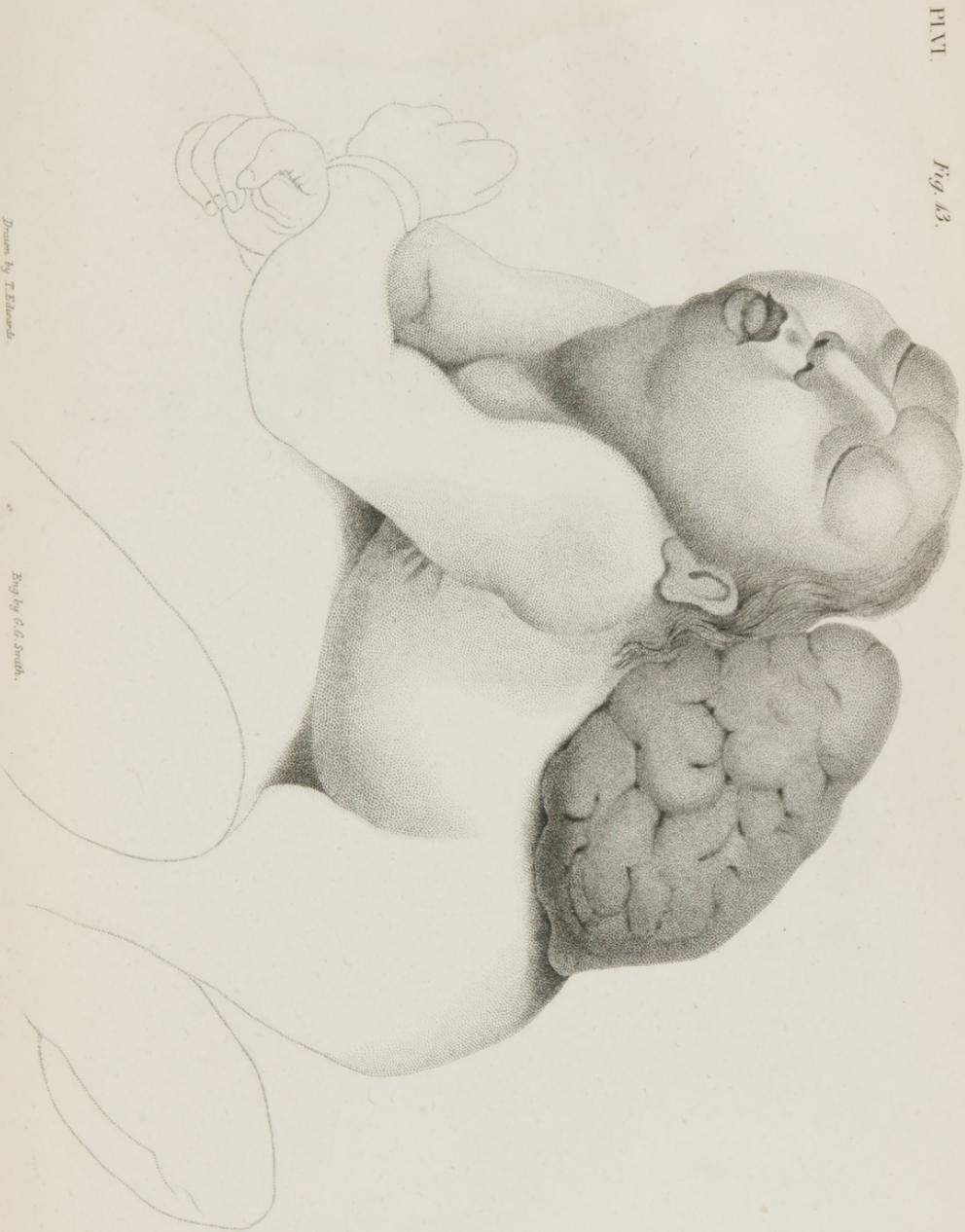
Fig. 9'



Fig. 9







Drawn by T. Edwards.

Eng. by G. & S. Smith.



Fig. 14.

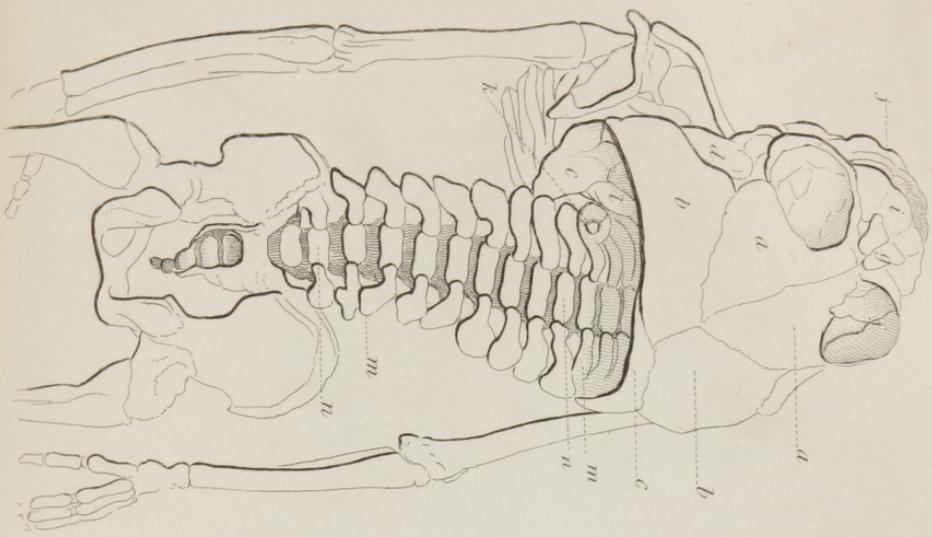


Fig. 15.



Drawn & Engr. by G. Smith.



Fig. 18.

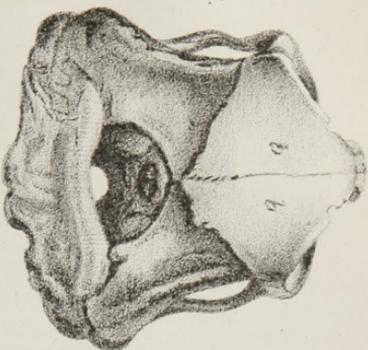


Fig. 19.



Fig. 20.

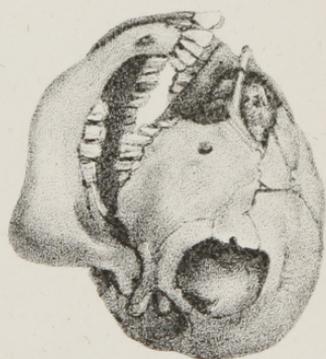
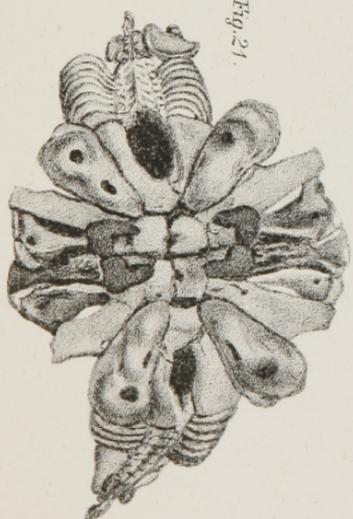


Fig. 21.



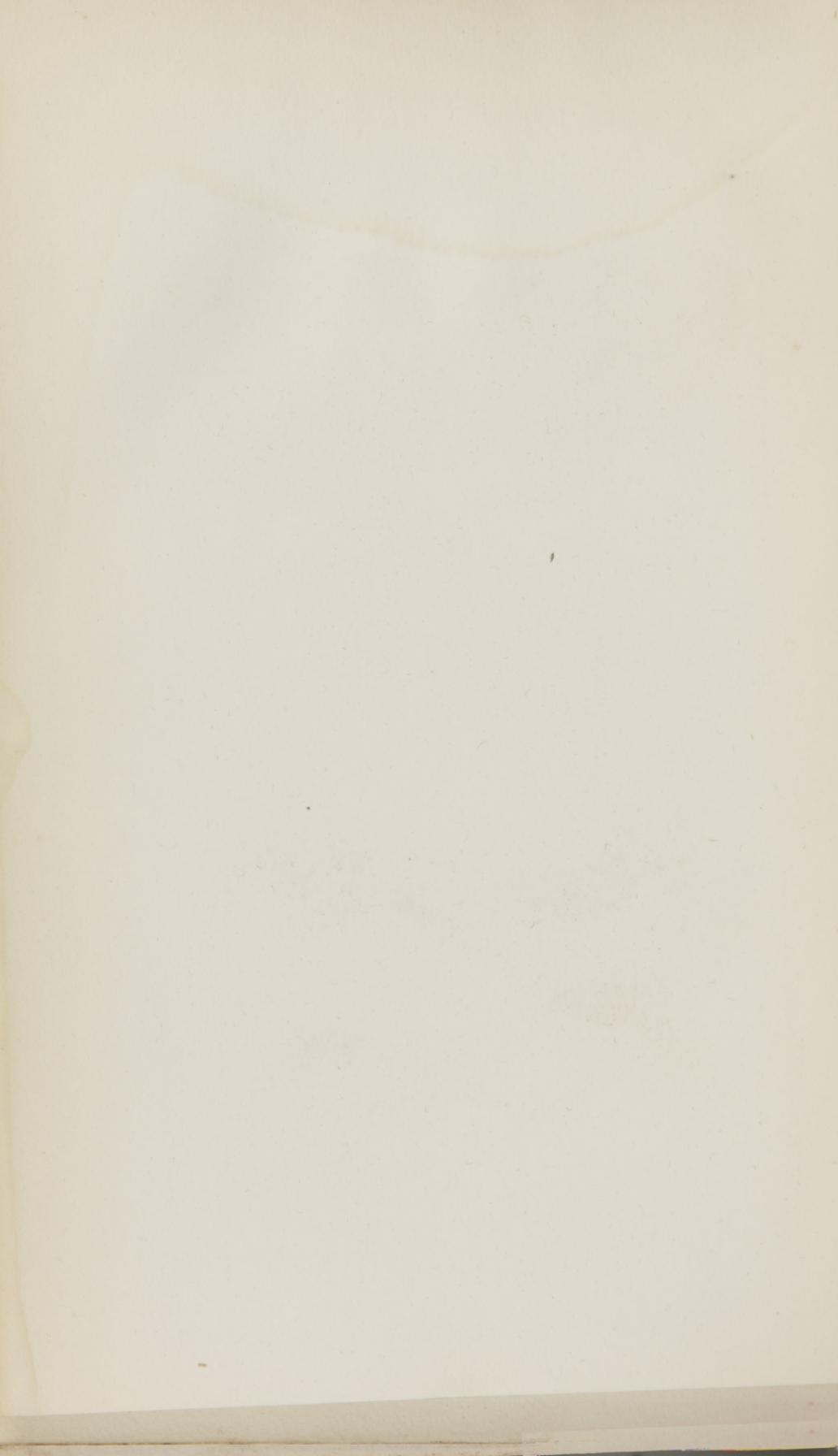


Fig. 28



Fig. 27.



Fig. 7.



Fig. 23.

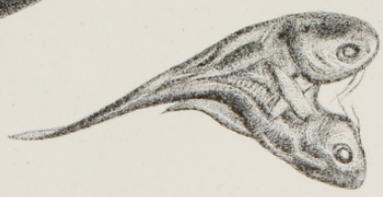






Fig. 22.

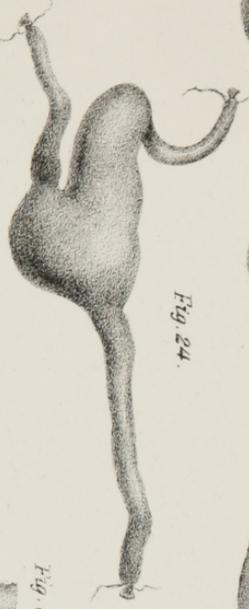


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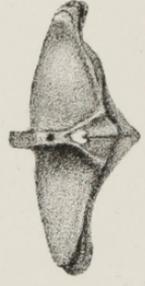


Fig. 33.



Fig. 34.

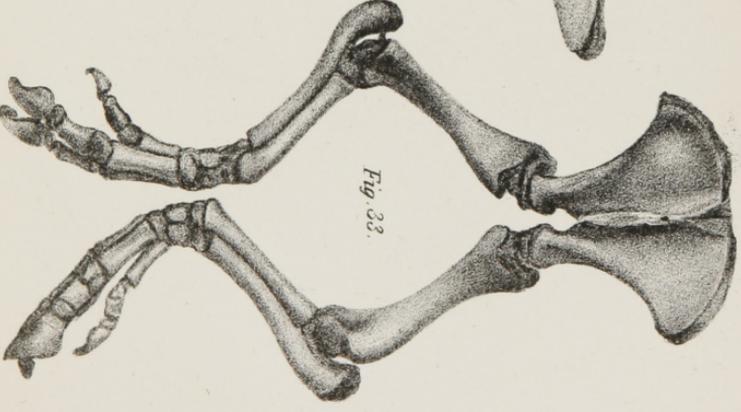
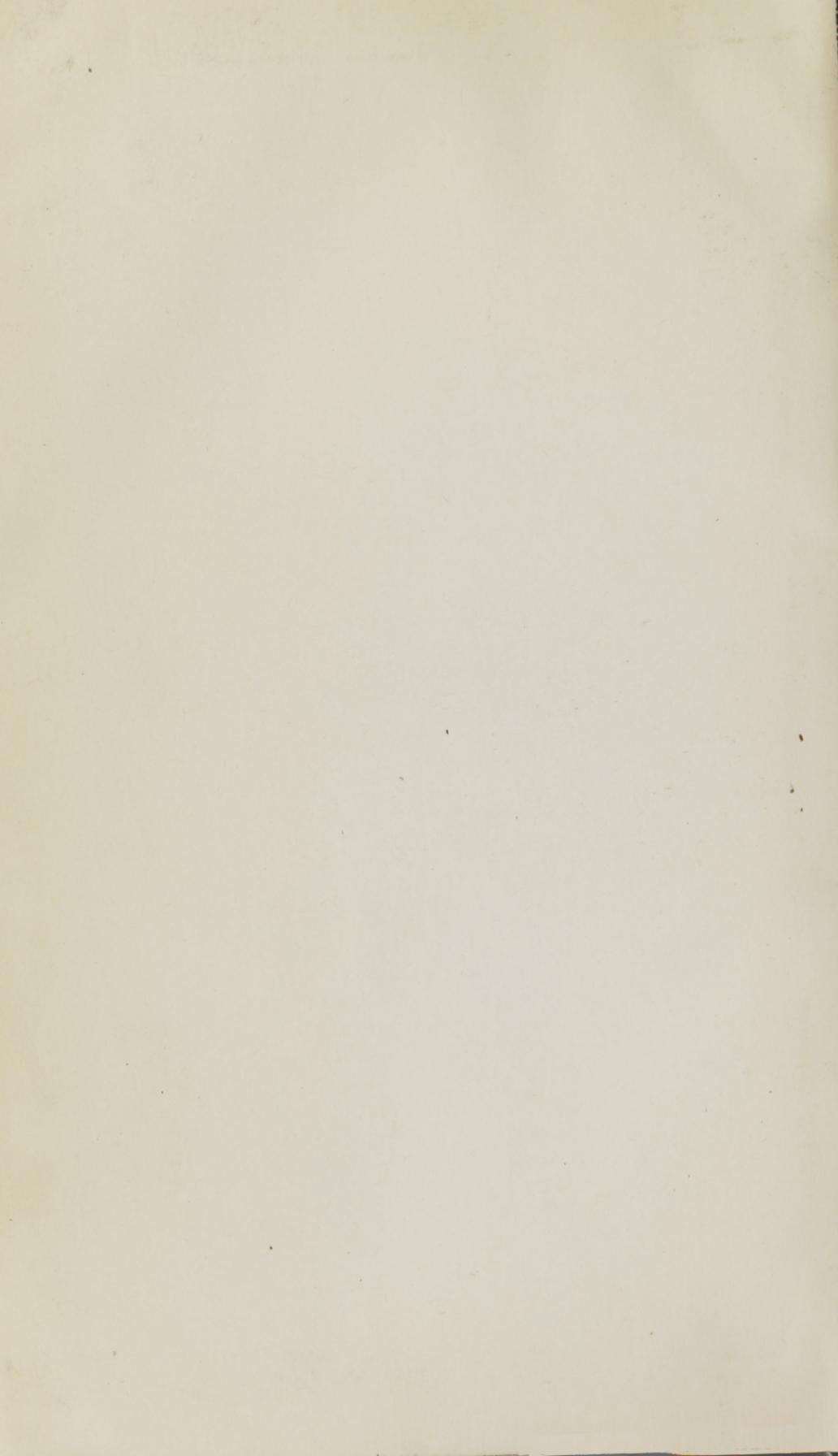


Fig. 38.



Fig. 25.





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