Bulletin of the Warren Anatomical Museum / Harvard Medical School.

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Harvard Medical School.
Whitney, William F.
Francis A. Countway Library of Medicine

Publication/Creation

Boston ; [Harvard Medical School], 1910.

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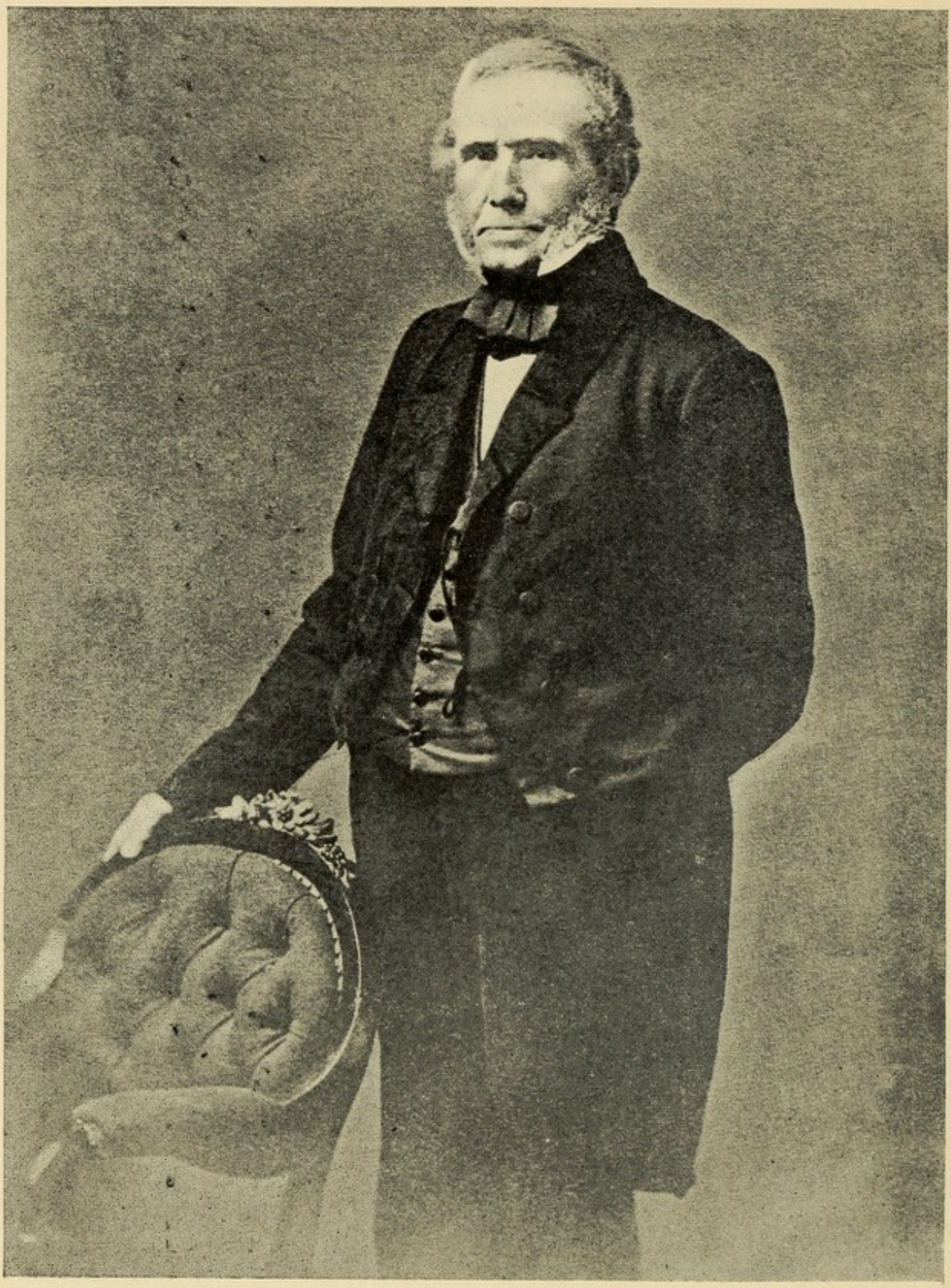
BULLETIN

OF THE

Warren Anatomical Museum

HARVARD MEDICAL SCHOOL



John Ball Brown, M. D.

BULLETIN OF THE WARREN ANATOMICAL MUSEUM

HARVARD MEDICAL SCHOOL.

NO. 1. PATHOLOGICAL ANATOMY.

BONES. JOINTS. SYNOVIAL MEMBRANES. TENDONS.

BOSTON, MASS.
1910

PREFACE.

MANY years have passed since the catalogue of the Warren Anatomical Museum was published. Since then, the cabinet of the Boston Society for Medical Improvement has been incorporated with it, and this, together with other additions, has more than doubled the number of specimens originally described. Therefore, it seems desirable that some notice should be taken of this increase. It has not been considered expedient, however, to attempt to publish a complete catalogue, but, rather, to describe parts of the collection from time to time, in the form of bulletins.

This, the first one, has been devoted to that part of the collection which may be considered as especially interesting to the orthopedic surgeon, as it forms a fairly well defined field of not too great extent.

The funds to defray the greater part of the expense of publication have been given most generously by Miss Rebecca Warren Brown, to commemorate the work of her father and brother, who were pioneers in this field in the country. And the grateful thanks of the Museum to her are placed on record here.

Dr. John Ball Brown, the father, who was the first surgeon here to devote himself solely to orthopedic surgery, was born in 1784. He graduated from Brown University in 1806, studied medicine with Drs. Holyoke and Little of Salem. He was appointed associate surgeon to the Massachusetts General Hospital at its foundation, and later consulting surgeon

In 1838 he turned his attention to orthopedic surgery, which he was one of the first to introduce into this country, and he is credited with having perform the first operation of tenotomy. His reputation for the treatment of club-foot, wry neck and affections of the spine was very great, and patients came from all parts of the country to consult him. The secret of his success lay not only in the skill with which he performed his operations, but also in the careful treatment afteward with mechanical appliances, for the invention and application of which he had great skill. He died at the age of seventy-eight. His portrait has been placed as a frontispiece to this volume.

The son, Dr. Buckminster Brown, was born in 1819. He had excellent educational advantages both here and abroad, but was seriously handicapped by a great physical deformity. He developed orthopedic surgery as a specialty here in America, and by him the English methods were carried out with great thoroughness. One of his most noted cases was the cure of double congenital dislocation of the hip by traction and recumbency, which was the first case ever treated in this way. Occasionally he worked outside of his specialty, as shown in the cure of an iliac aneurism by pressure, without confining the patient to bed. (Museum specimen No. 4554.)

Casts of many of his cases of club feet, showing the condition before and after treatment, are in the collection. They can be seen grouped together in the lower part of Cabinet 21 B and C, pp. 27 and 34, and are described in the section on Club-foot of the bulletin. His death occurred in 1891.

In the following pages, no attempt has been made to describe all of the specimens in this division of the collection, but a selection has been made of those which may be regarded as types. The others, of which there are many, usually vary in some slight detail, which would be only of interest to a special student. In general, they show the structural changes in bones, articulating surfaces, synovial cavities, bursæ and tendons, which can be illustrated by permanently preserved specimens.

The general arrangement of the bulletin is first to describe the specimens illustrating the infectious processes of which the ætiology is generally accepted. Then, those which can be referred to congenital, developmental or nutritive disturbances. And, finally, those of which the ætiology is still doubtful. This follows the general grouping on the shelves in the Museum, and will facilitate the examination of the specimens themselves. Beyond this, no attempt has been made to give the exact position in the cases. For it is expected that any one who may be interested to study the objects, will apply to the curator, who will gladly aid him by every means in his power.

The illustrations, it is hoped, will give an additional value to the bulletin, especially to those who may not personally be able to visit the collection.

The curator wishes to express his thanks to the many friends of the Museum who have enriched its collection, and especially to Doctors J. Collins Warren, E H. Bradford and Augustus Thorndike for their unfailing interest and valuable suggestions in the preparation of this bulletin.

WILLIAM F. WHITNEY, M. D.
Curator.

CONTENTS.

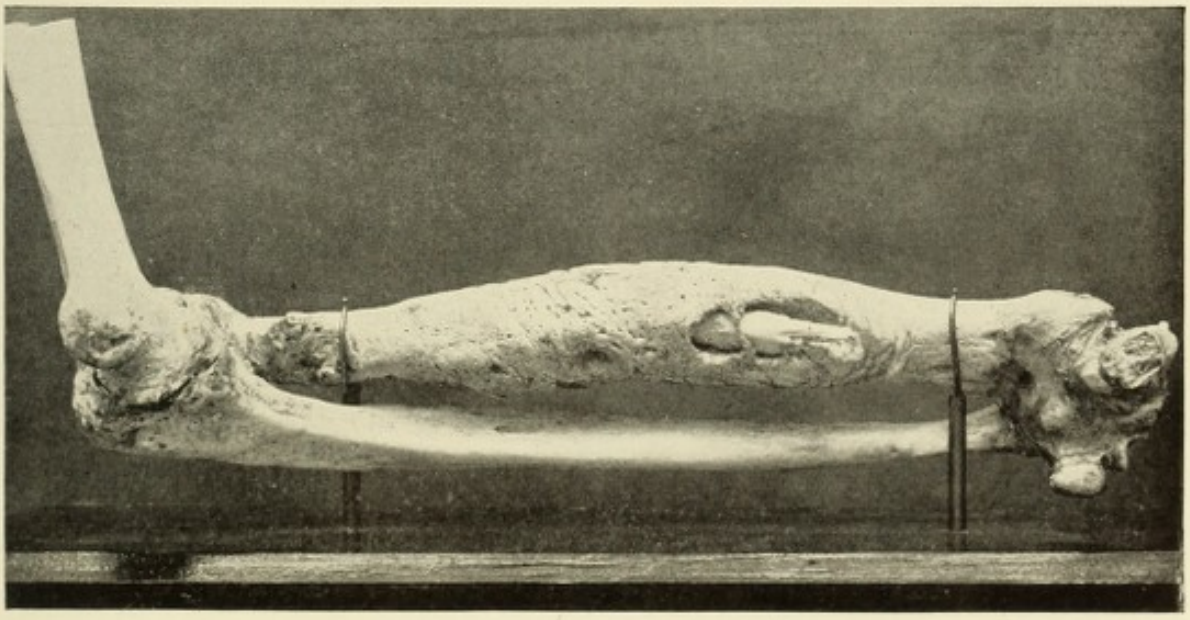
BONES.

OSTEOMYELITIS.

1199. **Humerus.** Lower two-thirds dried.

There is a large deposit of new bone about the elbow joint and along the middle of the shaft which, in general, is light. Articular surface not involved.

From a boy 17 years old. The disease was of eight months' duration. Large abscesses had formed about the shoulder joint and dead bone could be felt through a sinus. There was no disease of the joint although there was a cavity between the head and the shaft of the humerus. Amputation was followed by death five days later. 1847. DR. J. C. WARREN



3658. Radius. Osteomyelitis.

3658. **Radius.** The lower part of the humerus, radius and ulna dried.

The shaft of the bone is enlarged, roughened and several openings communicate with the central cavity in which is a sequestrum about 7.5 cm. long. The ulna and lower part of the humerus are healthy.

From a healthy man 55 years old, who in February, 1868, had a severe attack of inflammation about the bone. Ten months later there was copious hemorrhage and the limb was amputated. The radial artery had been completely severed by the pointed end of the sequestrum. Recovery. 1870.

Dr. Geo. H. Lyman.

9997. **Radius.** The radius in fluid.

The shaft is completely necrotic and surrounded by a shell of newly formed bone, in places 3 cm. thick, very rough, dense and irregular. All that can be recognized is the head and a portion of the styloid process. 1904.

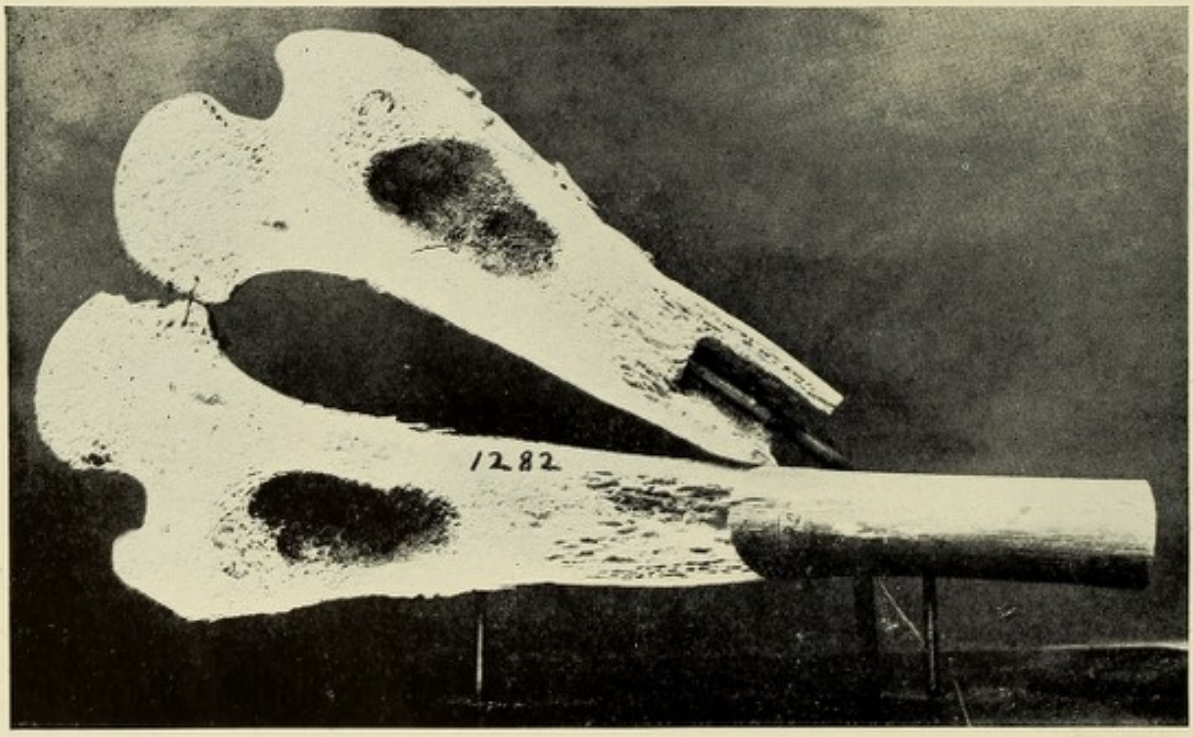
Mass. General Hospital.

8275. **Pelvis. Abscess.** The pelvis, dried.

The right iliac bone is slightly thickened about the upper side of the acetabulum. At the centre of the inner surface, just above the iliopectoneal line, is an opening about 2 cm. in diameter, irregularly oval, with smooth edges leading into a smooth cavity in the interior of the bone. The inner surface of the bone, above the opening, is also slightly thickened and porous.

From an adult.

1282. **Femur. Abscess.** A section through the upper two-thirds of the femur.



1282. Femur. Abscess.

There is a cavity in the substance of the bone just below the neck, 5 cm.

long, of oval form, perfectly defined and roughened upon the inner surface, but with no appearance of acute caries Upon the front of the bone is a small defined outlet, and toward the back a still smaller one. The structure of the bone around the cavity is compact to a considerable extent and the medullary cavity commences lower than usual. Externally and corresponding with the cavity, the bone is rough from a new deposit. The head is flattened, the neck shortened, and much more in line with the shaft than usual. The bone was dry when sawed and the cavity empty.

From an adult. 1860. Dr. R M. Hodges.

9287. **Femur. Abscess.** The lower half of the femur sawed in two, in fluid.

The shaft of the bone is irregularly thickened with more or less obliteration of the medullary cavity. At the lower part, just above the condyle, is an irregular cavity about 6 cm. in extent, which was filled with pus and partly covered with granulation tissue.

From a man 43 years old. Eight years before entrance to the hospital he injured his thigh by falling down stairs. This was followed by inflammation and pain, necessitating the use of crutches. An abscess formed which opened spontaneously, leaving a sinus, and was subsequently followed by death. 1897.

Boston City Hospital.

1234. **Femur. Tibia.** The bones of the leg dried.

The femur, is much enlarged and deformed, excepting the articular surfaces, which are rough and irregular with large foramina for vessels. There are several cloacae at the bottom of which small portions of dead bone are seen, but of which one only is loose. The structure is generally firm. It appears as if a large periosteal deposit may have taken place, and just above the condyles, anteriorly, this is detached from the surface beneath.

The tibia is much less diseased than the femur, and chiefly the lower part. Posteriorly there is caries to the extent of several centimetres, but nowhere to any great width.

The fibula is slightly enlarged toward the lower extremity.

From a boy 14 years old. Before entrance to the hospital he had swelling, pain, ulcers and sinuses for eighteen months. The whole limb was much swollen, and to the feel the bones were much enlarged. The boy had become much reduced and died a month after admission. 1859. Dr. H. J. Bigelow.

1235. **Femur.** The right femur dried.

The lower half is very much enlarged. The outer surface is almost entirely covered by irregular thin plate-like growths of new bone. The structure is very light. At the junction of the middle and upper third of the bone it is irregular as if there had been at some time a fracture.

From an adult. 1869. DR. CHARLES B. PORTER.

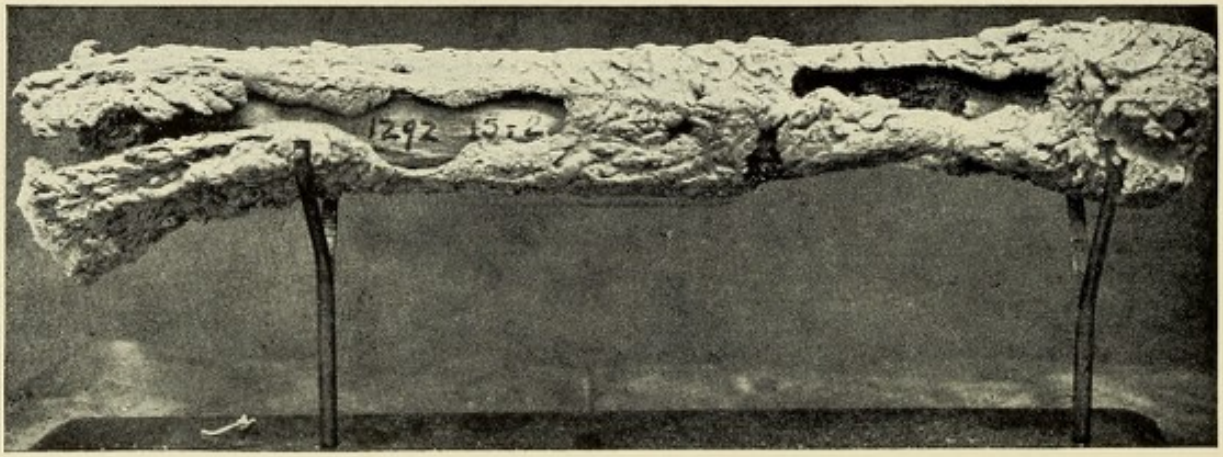
1429. **Knee-Joint.** The bones excised, dried.

The head of the tibia shows a deep excavation, with roughened base on one side. The patella is rough and reduced in size.

From a man who fractured his patella, and a year afterward entered the hospital with suppuration in the joint of four years' duration. The bones were excised, followed by good recovery.

1430. **Femur and Tibia.** Dried.

There is firm anchylosis in a straight position. The patient died two and a half years after excision of the joint (1429) from a fracture of the thigh. 1862. DR. H. J. BIGELOW.



1292. Tibia. Osteomyelitis.

1292. **Tibia.** The tibia dried.

It is extensively diseased. There is a cavity extending throughout its entire length, containing a sequestrum, which to a great extent is smooth upon the surface. The shell of bone surrounding it is thin with irregular nodules slightly eburnated and giving to the whole a bark-like appearance.

From a young subject. 1869. DR. C. B. PORTER.

6323. **Tibia. Femur.** Dried.

The upper part of the tibia is greatly thickened, roughened with a bark-like appearance on the surface. There are several openings leading to cavi-

ties containing a little loose bone. The transverse section of the shaft shows a very general enlargement of the bone with a distinct periosteal deposit.

From a man 32 years old. Twenty years before entrance to the hospital he had a severe fever followed by two sores on the leg, one of which, near the ankle, never healed. For the last few months had suffered pain about knee, with discharge from numerous sinuses over the head of the tibia.

Amputation followed by recovery. 1856. Dr. C. B. Fifield

10156. Tibia. The right tibia dried.

The entire shaft of the tibia is deformed, thickened, and the upper part is extensively carious, with deep losses of substance. The lower end of the bone is markedly thickened and hypertrophied.

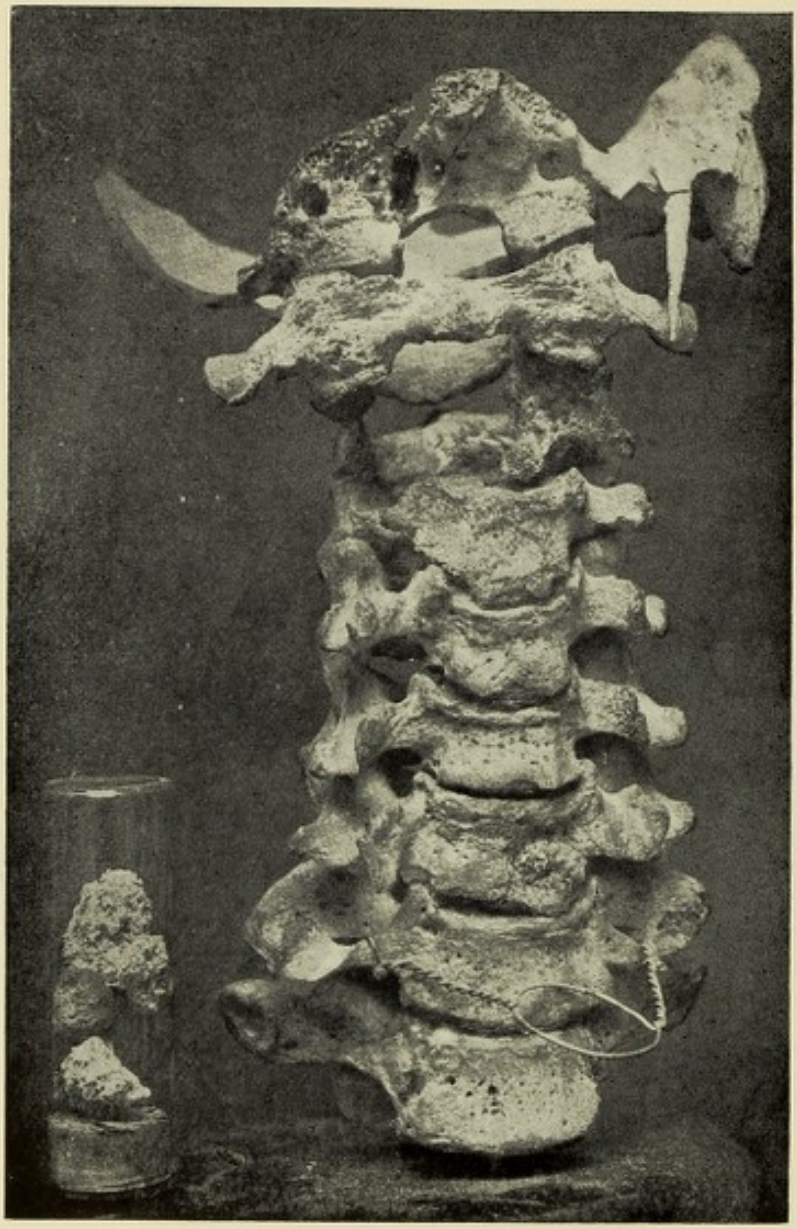
From an adult.

1278. Tarsus. The lower part of the right leg and foot, dried.

There is extensive caries and roughening of the bones of the tarsus, especially of the astragalus. In this there is an excavated cavity with rather smooth walls. The articular surfaces are little affected.

From a man 45 years old, who, for twelve to fourteen years had attacks of inflammation over the outer surface of the os calcis with discharge of bone. Amputation was followed by recovery. 1862. Dr. R. M. Hodges.

8284. Vertebrae. A part of the occiput and cervical vertebrae dried. The articulating surface and basilar process of the occipital bone, together with the odontoid process are extensively destroyed, as well as the body of the second cervical vertebra.



8284. Odontoid Process. Tuberculosis.

From a man 27 years old. February, 1851, pain commenced between the shoulders. A month later there was swelling in the back of the neck from the occiput to the fifth or sixth cervical vertebra. The symptoms continued for a year after commencement of the disease. He was then seized suddenly

with a twinge in his neck, and at the same time the head was violently twisted toward the left shoulder, followed by intense agony, dyspnoea and convulsions. He shortly recovered so as to be able to walk across the street. This was followed in a week by paralysis, and he died two months later. 1851.

Dr. Buckminster Brown.

5113. **Vertebrae.** The cervical vertebrae dried.

There is caries of the bodies of the four last cervical vertebrae with anchylosis of the wings of the third and fourth.

From a little girl 11 years old, who died from extensive tuberculosis of the lungs and intestines, and about five months before death she complained of pain in her neck, sometimes radiating to the shoulders. The neck was stiff.

Dr. Woodbridge Strong.

4619. **Vertebrae.** A part of the spinal column, dried.

A section shows that the bodies of the last four cervical and first dorsal vertebrae are almost entirely destroyed and replaced by a white, cheesy material. The lamina of the fifth cervical is much altered in form and those of the sixth stop far short of the body of the bone. The laminae of the cervical vertebrae are extensively fused, and there is a marked forward dislocation at the seat of disease.

From a girl 6¼ years old who had showed symptoms of disease since she was 14 months old. When 2½ years old she fell from a chair and paralysis soon followed. When 4 years old an abscess formed in the neck which was not opened until eight months before death. 1876. Dr. S. G. Webber.

8744. **Vertebrae.** A portion of the neck and thorax in fluid.

There is an irregularly rounded swelling in front of the vertebrae by which the trachea is pushed forward and flattened. The bodies of the first five dorsal vertebrae are partly destroyed and infiltrated with cheesy material.

8744-1. **Spinal Cord and Membranes** from No. 8744, in fluid.

The cord is flattened and distorted and there is a flattened cheesy mass on the anterior surface of the dura matter. This corresponds to a similar process in the bodies of the vertebrae. 1896. Children's Hospital.

9032. **Vertebrae.** The dorsal region with part of the chest wall in fluid.

A section through eight dorsal vertebrae shows that the body of one is almost destroyed and replaced by a cheesy abscess which bulges backward into the spinal canal, but has not broken into it. Anteriorly the process has ex-

tended along the surface of the four contiguous vertebrae beneath the ligament.

From a child. DR. E. H. NICHOLS.

9035. **Vertebrae.** A part of the dorsal region and chest wall in fluid.

A section made through the vertebrae shows almost complete destruction of one of the bodies with a large abscess in front and extension of the process backward into a canal beneath the ligament. There is a slight knuckle but there were no paralytic symptoms.

From a child. BOSTON CITY HOSPITAL

9036. **Vertebrae.** Several dorsal vertebrae in fluid.

A section shows entire cheesy destruction of one of them with invasion of the spinal canal and an abscess in front of the bodies. There is only slight evidence of a knuckle.

From an infant. WEST END NURSERY.

1375. **Vertebrae.** The entire spine, dried.

It shows extensive destruction of the sixth and seventh dorsal vertebrae with anchylosis of the spinous processes. The bodies of the two upper lumbar vertebrae are also extensively diseased. Here the disease was apparently recent and progressive, while in the upper region it had been arrested.

From a woman 26 years old who had an accident about a year before her death, when her spine was supposed to have been fractured. There was, however, no paralysis. A lumbar abscess formed and was opened. 1866.

DR. J. S JONES.

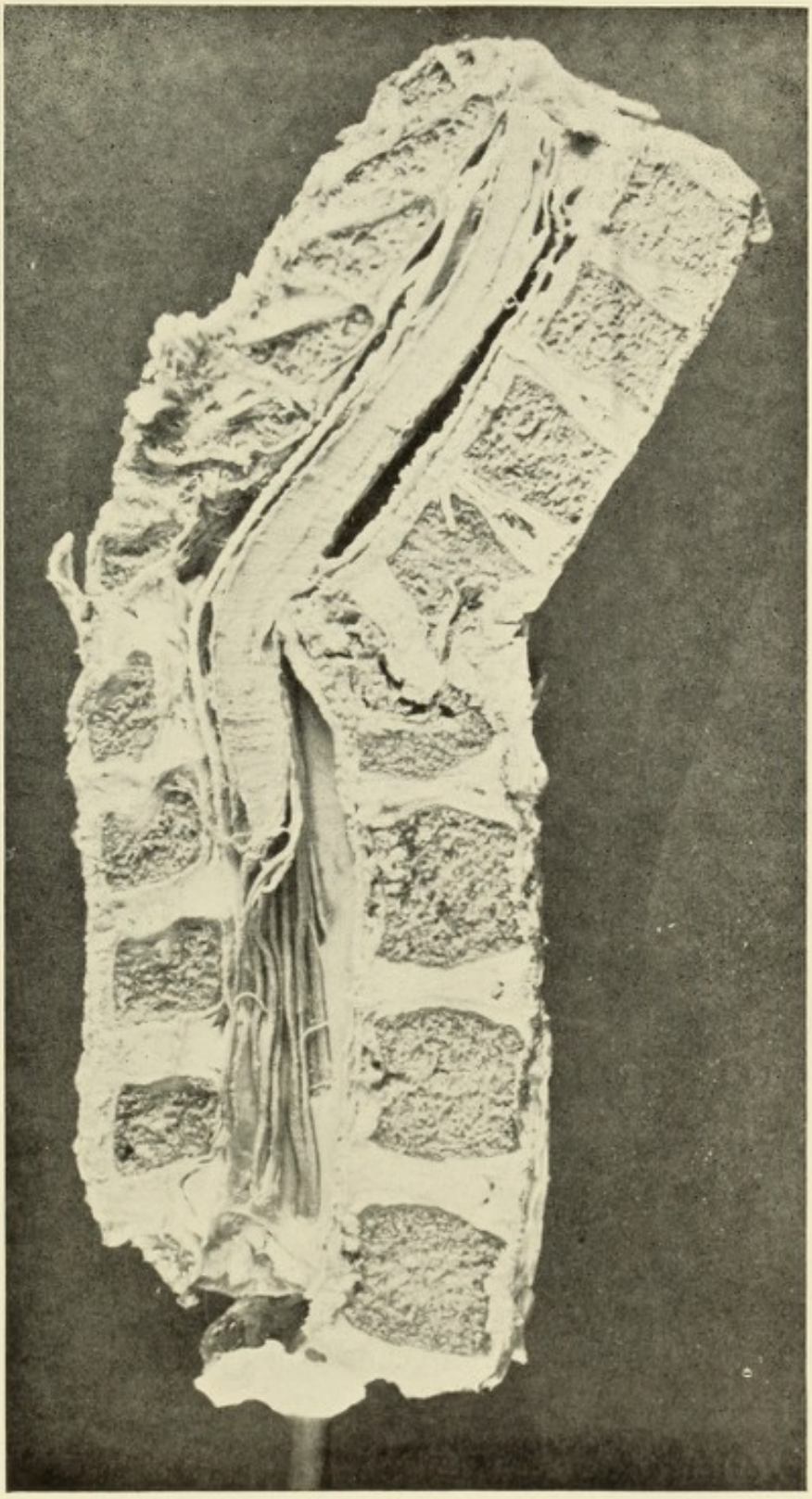
9033. **Vertebrae.** (See p. 9). A part of the dorsal and lumbar region of the spine, in fluid.

A section shows that the body of one dorsal vertebra, a portion of the anterior part of the intevertebral substance and of the body of the vertebra above have been destroyed and replaced by cheesy material. A downward and backward dislocation has taken place with projection of the bone into the spinal canal, but without apparent pressure upon the cord. Posteriorly a space has been formed filled with soft tissue, and above it the processes project backward as a knuckle.

From a child. 1896. CHILDREN'S HOSPITAL.

9340. **Vertebrae.** A section through the lower dorsal and upper lumbar vertebrae, in fluid.

The bodies of the lumbar are largely replaced by a white, cheesy material.



9033. Vertebrae. Tuberculosis.

There is a cheesy abscess lying beneath the fascia in front of the bodies which make an angle with considerable backward displacement.

Dr. Edward H. Nichols.

9838. Vertebrae. A part of the spinal column, in fluid

A section through the last five dorsal and three upper lumbar vertebrae shows at the junction of this region a marked loss of substance of the bodies of the bones. The spine is bent forward. There are several cheesy areas and the trabeculae of bone are extensively thickened. There is no evident pressure on the cord.

From a child.

8128. Vertebrae. The spine and pelvis with portions of the ribs attached, in fluid.

The bodies of the lower dorsal and all of the lumbar vertebrae are extensively roughened and carious. The ribs are disarticulated and somewhat diseased.

From a child. 1887. Dr. O. K. Newell.

9037. Vertebrae. (See p. 11). The lumbar region and pelvis, in fluid.

A section through the lumbar vertebrae, sacrum and pelvis shows an extensive destruction of the body of the last lumbar, with replacement by a cheesy material. Beneath the fascia, over the psoas muscle, on the left side, is a cavity about 9 cm. in diameter, filled with cheesy pus.

From a child. Children's Hospital.

9839. Vertebrae. Several of the lumbar vertebrae in fluid.

A section shows cheesy abscesses of the bodies, in one of which is a considerable loss of substance.

From a man 66 years old. Some time before death he struck his back, and after that was an invalid with pain referred to the back. 1903.

L. I. Hospital.

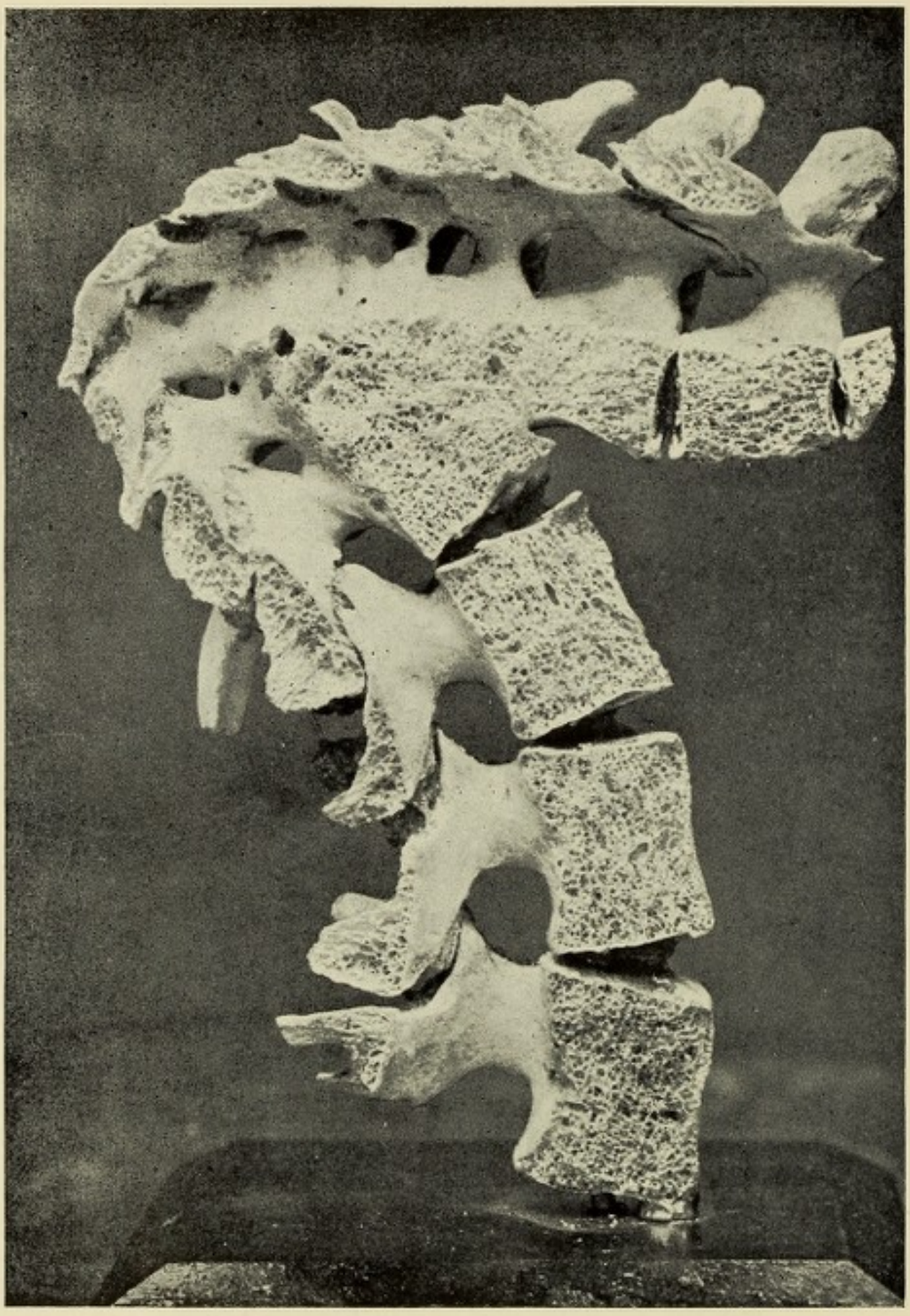
1373. Vertebrae. Part of the spinal column, dried.

A section shows the bodies of the seventh, eighth, ninth and tenth dorsal vertebrae more or less absorbed and united, so that there is a curvature of nearly a right angle. 1860. Dr. R. M. Hodges.

8109. Vertebrae. (See p. 12). A section through the middle of the dorsal region, one-half in fluid, the other dried.

The vertebrae are flexed at more than a right angle and the bodies are firmly united in the new position About the portion which has coalesced

9037. Psoas Abscess.



8109. Vertebrae. Healed Tuberculosis.

eight ribs can be counted and there is no trace of the separate bodies from which it is formed. The cancellated structure is similar to that of the healthy bone. There is no narrowing of the canal and the cord is not compressed. Posteriorly opposite to the point of extreme flexion, there is an increase of peridural fat tissue.

From a woman 50 years old who died of nephritis.

Dr. T. W. Perkins.

9640–2. **Vertebrae.** The entire spine with the pelvis, dried.

There is extensive loss of substance and anchylosis in the mid-dorsal region, with considerable antero-posterior curvature. The aorta is curved over to the left side of the vertebrae throughout the thoracic region. 1897.

Dr. Thomas Dwight.

1371. **Vertebrae.** (See p. 14). The entire skeleton of a young adult.

The bodies and laminae of four middle dorsal vertebrae are extensively absorbed and fused into one mass, with a very marked antero-posterior curvature. There is slight caries of the other dorsal vertebrae. The ribs are distorted and the bones generally delicate. 1847. Dr. J C. Warren.

5117. **Vertebrae.** (See p. 15). The entire spine and pelvis, dried.

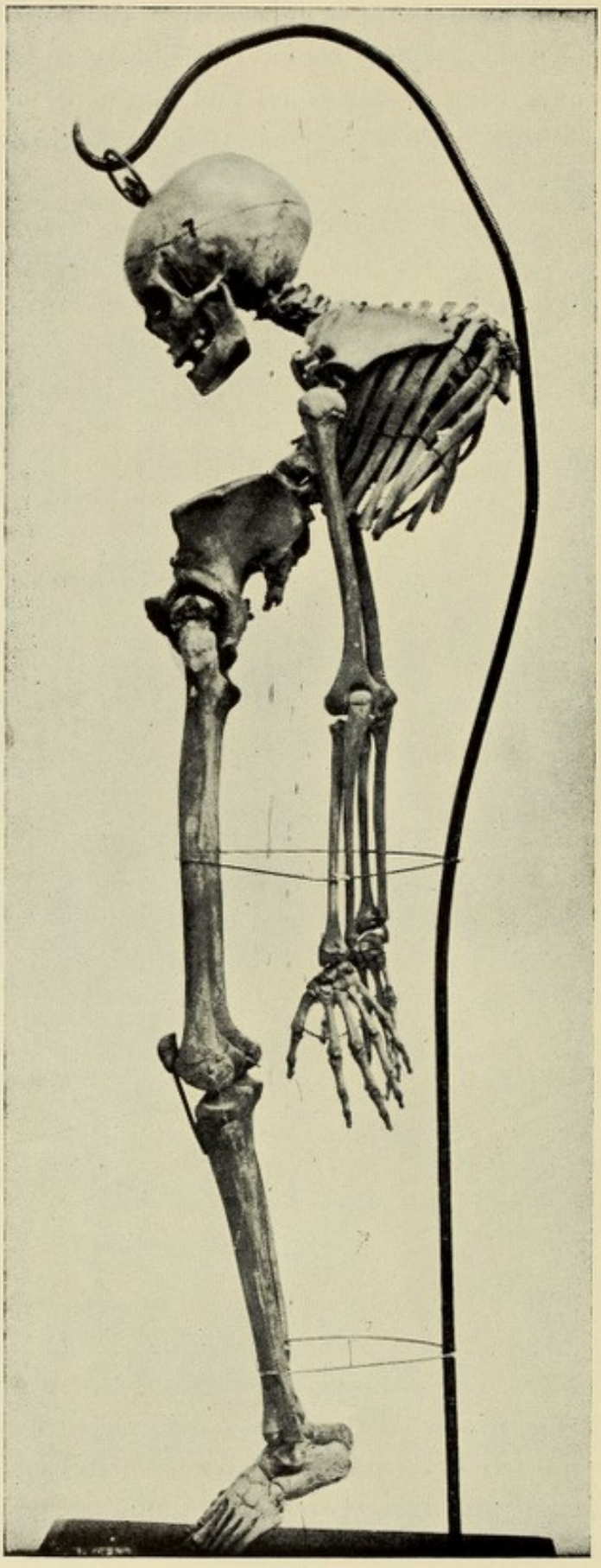
There is extensive destruction of the bodies of the last seven or eight dorsal vertebrae, with fusion of the lowest ones into a solid, wedge-shaped mass. This caused a sharp antero-posterior curvature. There is also an area on the inner surface of the ilium where the bone has been destroyed, and is almost perforated.

From a man 19 years old. The disease began six years before death, and was attributed to a fall from a horse. Sinuses formed about the left thigh almost from the beginning, and persisted until death. Faeces were occasionally discharged through some of these. 1835. Dr. J. B. S. Jackson.

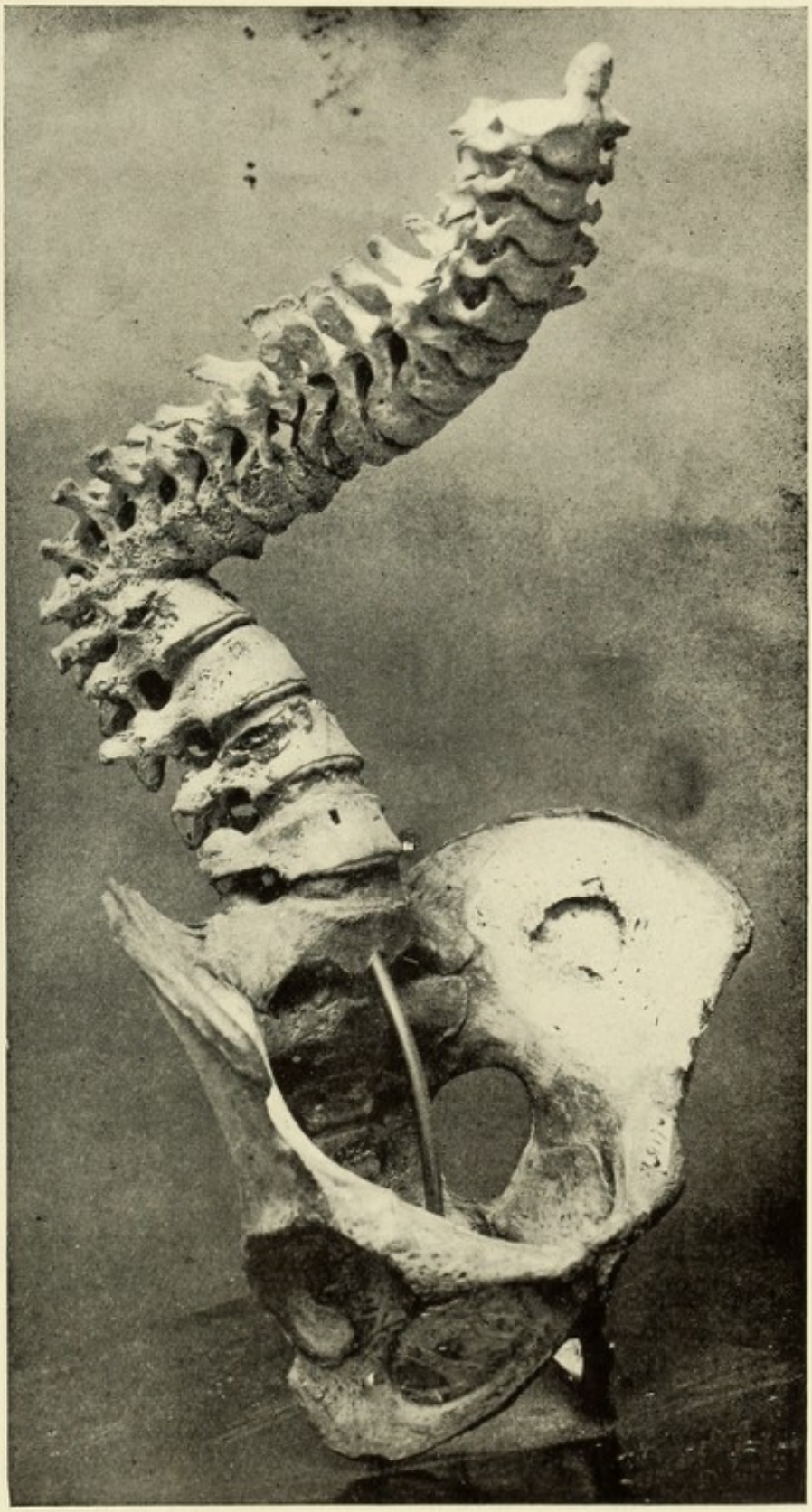
5119. **Vertebrae.** Several dorsal and two lumbar vertebrae, dried.

There is a curvature which is very strongly marked and forms an angle of 25 to 30 degrees. The bodies of the vertebrae are extremely carious, and the last dorsal is nearly destroyed. The lower dorsal are firmly united to each other by the bodies and wings. One of the ribs is anchylosed and the others are more or less diseased and compressed. The spinous processes are much depressed.

From a woman 26 years old. The disease commenced when she was 12



1371. Vertebrae. Tuberculosis.



5117. Vertebrae. Tuberculosis.

years old, increased for three or four years, after which it remained stationary. At the commencement there was some loss of power in the legs. 1840.

Dr. John Warren.

1376. **Vertebrae.** A section through the lower half of the spine and pelvis, dried.

The bones of one-half preserved in connection with the ribs. The curvature is so extensive that the body of the eighth dorsal nearly touches the fourth lumbar; and the lower rib comes in contact with the crest of the ilium. The bodies of the three last dorsal vertebrae and the first lumbar are mostly absorbed and fused into an irregular mass. The laminae are also extensively fused. The spinal canal is sufficiently large.

From an adult. 1847. Dr. J. C. Warren.

9640. **Vertebrae.** The entire spine and sacrum, dried. There is a marked loss of substance of the bodies of the vertebrae at the junction of the dorsal and lumbar regions, with firm union in the new position and marked antero-posterior curvature. The aorta is bent sharply to the right of the ninth rib, then turns suddenly reaching well over to the left side and back again to the middle just above its bifurcation. 1897. Dr. Thomas Dwight.

9640-1. **Vertebrae.** The spine and pelvis, dried. There is great loss of substance in the lumbar region and anchylosis, with marked antero-posterior curvature. The aorta lies on the left side of the bodies of the vertebrae, and at the bend of curvature is thrown into two loops, lying on the lower ribs of each side. 1897. Dr. Thomas Dwight.

6166. **Vertebrae.** The two lumbar vertebrae and sacrum, dried. The bodies of the second, third and fourth lumbar are mostly absorbed and fused into a wedge-shaped mass. The posterior laminae are anchylosed.

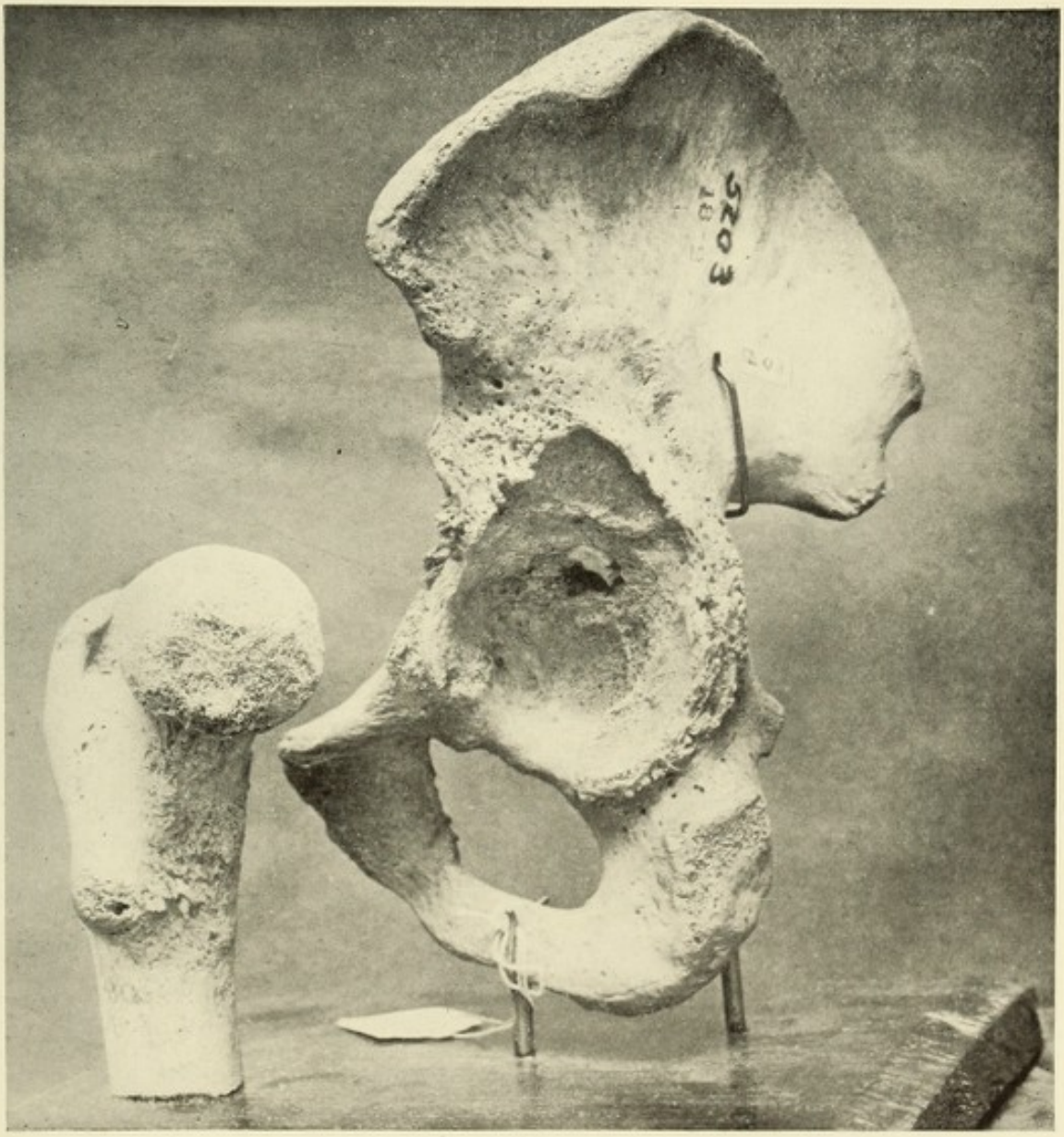
From a boy 14 years old. The symptoms dated from ten months before death and consisted of pain in the lower part of the back, soon followed by a slight protrusion. A psoas abscess formed, but he was able to be about until two months before death. 1852. Dr. H. G. Clark.

8274. **Vertebrae.** The last two lumbar vertebrae and sacrum, dried. The lower lumbar vertebra is greatly destroyed and partly united to the sacrum by bony anchylosis. There are also large carious holes at the intervertebral foramina.

6295. **Shoulder Joint.** The upper part of the humerus and scapula, dried.

The head of the humerus is extensively destroyed and the surface roughened and filled with large cavities. The articular surface of the scapula is also roughened, but the destruction is not so great as of the humerus.

From a man 33 years old. Disease of the joint had existed for ten or twelve years before death, and there was great pain at first. Disease stationery for three or four years before death, without pain. Death from caries of the spine. 1856. DR. CALVIN ELLIS.



5203. Hip Joint. Tuberculosis.

5203. **Hip Joint.** (See p. 17.) The left ilium and upper part of femur, dried.

The head of the femur is roughened, except at one spot which is eburnated. The acetabulum is much enlarged upward and backward, with some thickening of the surrounding bone. The inner surface is rough, and near its centre is an irregular cavity in which is a piece of partly detached eburnated bone.

From an adult who died about two years after the commencement of the disease. He was hectic, the femur was dislocated and the round ligament destroyed. DR. S. D. TOWNSEND.

9040. **Hip Joint.** The ilium and upper part of the femur, in fluid.

A section shows a partial destruction of the head of the bone and acetabulum with some bony and fibrous union between them. There are small cheesy areas present in the bones. DR. E. H. NICHOLS.

8538. **Hip Joint.** A portion of the pelvis and femur, dried.

A section shows the head of the femur excised and replaced by an irregularly shaped mass of cancellated bone. The acetabulum is enlarged and there is a deposit of new bone on the outer edge, with thickening of the entire ilium.

From a child who had been operated upon two years before.

DR. E. H. BRADFORD.

8530. **Hip Joint.** A section through a portion of the ilium and femur, in fluid.

The capsule about the joint is thickened, the head of the femur somewhat flattened and united to the acetabulum by fibrous adhesions. There is no evidence of any acute disease.

From a boy nine years old who had symptoms of hip disease for five years. He was regarded as cured for the two following years, at which time he re-entered the hospital and died a few days afterward of general tuberculosis. 1893. CHILDREN'S HOSPITAL.

9041. **Hip Joint** A section through the upper part of the femur and ilium, in fluid.

The head of the bone is largely absorbed and the cavity of the acetabulum filled with fibrous and fat tissue. There is a firm, fibrous union between the end of the bone and the socket. DR. E. H. NICHOLS.

7870. Femur. A section through the head and neck of the femur, dried.

7870. Head of Femur. Tuberculosis.

The bone shows a deep cavity at the upper and posterior part of the head, with great roughening of the joint surface and neck. 1881.

Dr. C. B. Homans.

5249. Knee Joint. A section through the ends of the femur and tibia, dried.

There is a complete bony anchylosis between the femur and tibia, at a right angle.

From a man who wounded his knee with an axe ten years before, and who died from tuberculosis of the lungs. 1842.

1421. **Hip Joint.** Half of the pelvis and right femur, dried.

A section through the hip joint shows a firm, bony anchylosis of the head with its socket. The head is thrown somewhat upward and there is a strong inward twist of the lower end of the bone.

From a man 20 years old, who, five years before was kicked upon the hip by a horse, and had been lame from that time. The thigh was strongly inverted and carried toward the left side, and the hip quite prominent. Shortly before death he had suffered pain in the hip, and later an abscess opened there. Abscesses were also found on each side of the lumbar vertebrae and pus beneath the psoas muscle as far as the groin. 1868.

Dr. John Homans.

9045. **Knee Joint.** A section through the lower end of the femur, in fluid.

There is a large cheesy area in the lower end of the femur communicating with the joint along the lines of attachment of the ligaments. The synovial membrane is greatly thickened and filled with tubercular granulations nearly covering the end of the bone. 1896. Dr. J. C. Warren.

9042. **Knee Joint.** (See p. 21.) The left leg and foot from just above the knee, in fluid.

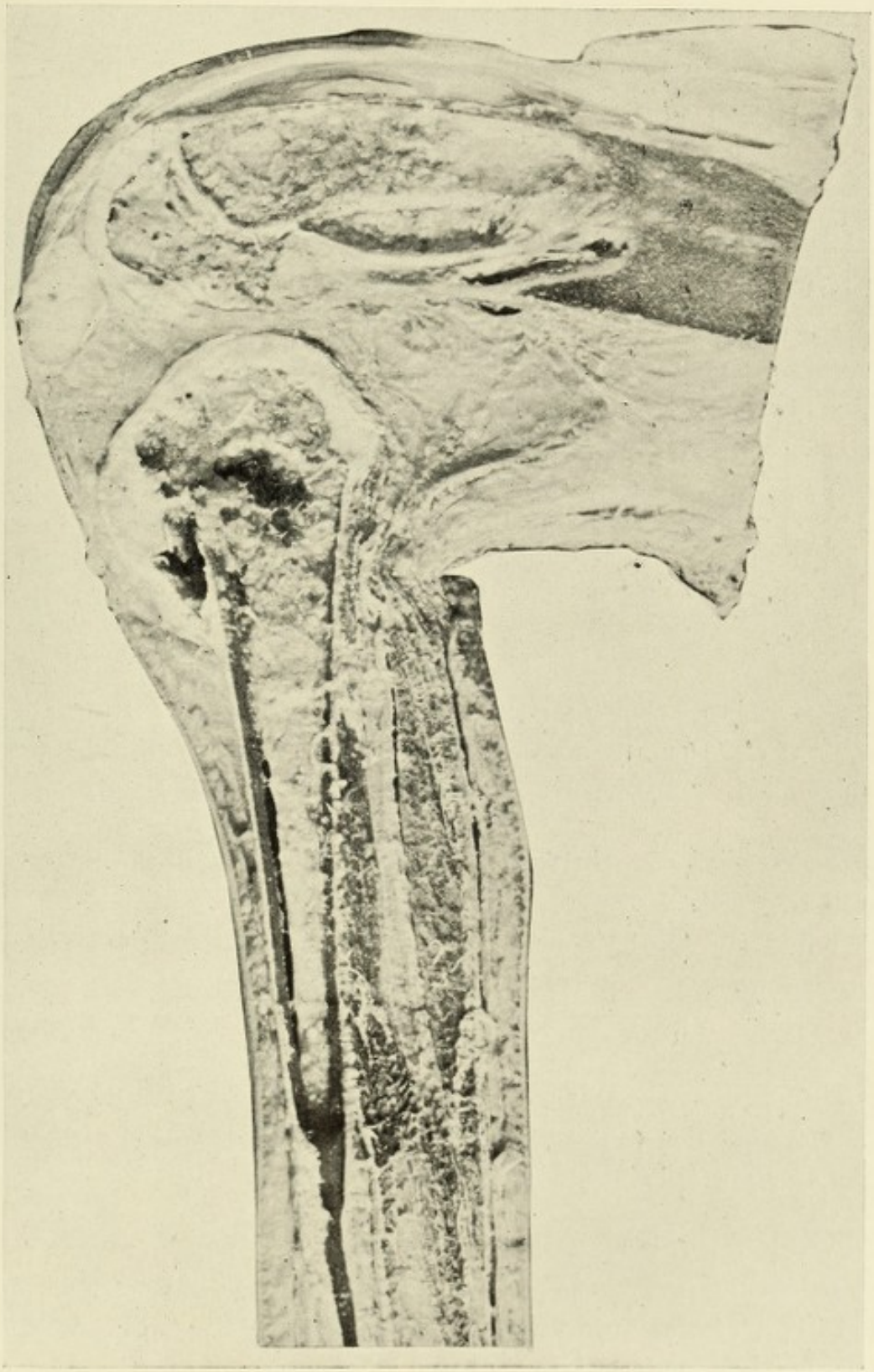
A vertical section has been made through the specimen. There is entire destruction of the joint with backward dislocation of the tibia, the space between the bones being filled with fibrous tissue. The leg is bent at a right angle. There is a large sinus leading into the femur with extensive necrosis of the end of the bone as well as a similar, though less extensive condition, in the head of the tibia. Scars of healed sinuses are present over the head of the tibia and about the ankle joint

From a child. 1896.

9043. **Knee Joint.** A section through the bones of the knee joint, in fluid.

The joint cavity has been entirely obliterated, and there is a firm, fibrous and bony union between the patella and the condyles of the femur. There is also union between the tibia and the femur, with a slight subluxation of the tibia. The remainder of the space is filled with fibrous tissue.

Dr. E. H. Nichols.



9042. Knee Joint. Tuberculosis. Subluxation.

CONGENITAL AND DEVELOPMENTAL DISEASES.

8028. **Bones. Cretinism.** The pelvis and lower extremities of a child at term, in fluid.

The cartilages are very much enlarged and distorted, and the shafts of the bones are arrested in development. There is a failure of ossification in the bones of the pelvis, and it is very irregular and narrowed antero-posteriorly. A section has been made of the tibia.

8194. **Skeleton. Cretinism.** A skeleton of a child at term, showing great thickening of the cartilaginous ends of the bones, the shafts of which are bent and thickened. The pelvis is flattened. The head is shortened antero-posteriorly.

8194 B. A cast showing the external appearances of 8194. The limbs are very short and the nose is very much depressed at its root. The fat tissue is well developed.

7864. **Bones. Cretinism.** The pelvis and bones of the lower extremities, in fluid.

The long bones are flattened, very much bent and the cartilaginous ends extremely enlarged. The pelvis is shallow.

From an infant at term. 1882. DR. W. L. RICHARDSON.

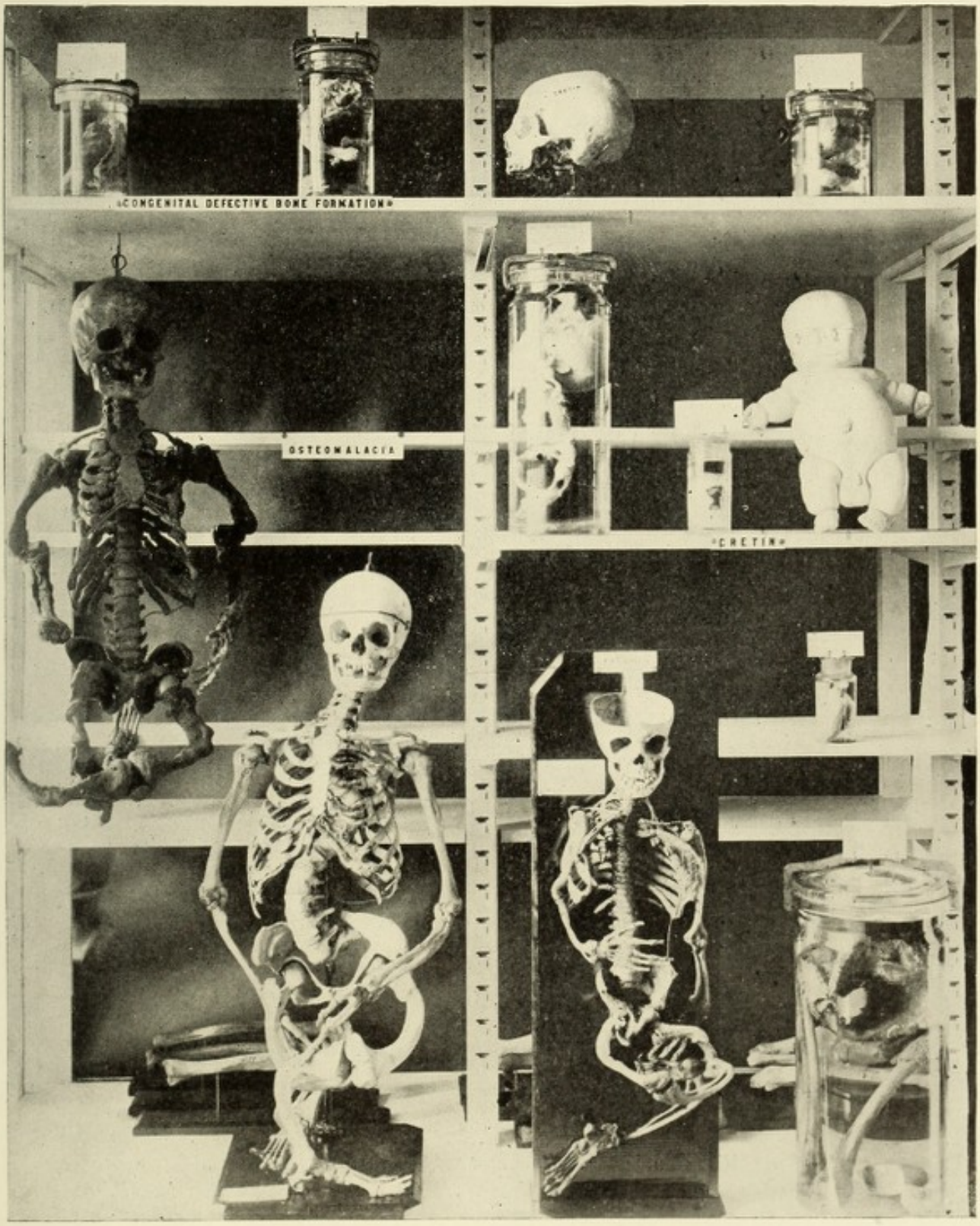
1558. **Skull. Cretinism.** A skull which is low, large posteriorly and bulging upon each side of the median line from just behind the vertex.

From an adult from the Haut-valais.

5544. **Skeleton. Osteomalacia.** An articulated skeleton.

The pelvis and long bones of the lower extremities are very much deformed, the position of the sacrum being horizontal, and the broad, thin, sickle-shaped fibulae very characteristic. There is marked lateral curvature of the spine. The head, upper extremities and feet are well formed, and the thorax very nearly so.

From an adult female. 1857.



Cabinet No. 21 A.

1545. Skeleton. Osteomalacia. The entire skeleton, dried.

The bones of the extremities are very short, due to multiple fractures, which are strongly united. The thorax is compressed and there are numerous fractures of the ribs. The pelvis is very small and compressed so that the inner surface of the ilium nearly touches the sacrum. The whole skeleton, excepting the head, is more or less atrophied, and many of the bones when soaked in water for preparation were very soft.

From an Indian 21 years old. His mode of locomotion was by a large wooden bowl in which he sat and moved the bowl by advancing first one side and then the other by means of his hands. 1874. DR. J. C. WARREN.

5077. Skeleton. Rachitis.

The skull is sufficiently well formed. The whole spine is curved somewhat backward, 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 femora, of which the left one has been broken and strongly united. The whole skeleton is very light and in the recent state appeared to possess a cartilaginous elasticity.

From a girl eight years old. DR. GEORGE PARKMAN.

8448. Bones. Rachitis. The ribs and sternum, in fluid.

A nodular enlargement at the junction of the cartilage and ribs, chiefly marked on the inner surface. From an infant. DR. THOMAS M. ROTCH.

9283. Bones. Rachitis. Sternum, ribs and section through the knee joint, in fluid.

The sternum shows marked prominence at the junction of the ribs, especially on the inner surface. The knee joint shows a broad, slightly irregular zone of ossification of a bluish color.

From an infant. 1898. INFANTS' HOSPITAL.

8562. Bones. Rachitis. One clavicle and a rib, through which sections have been made, in fluid.

The clavicle is bent in the middle at almost a right angle, with a wedge-shaped growth of fibrous tissue on the inner side. The ends are slightly enlarged and malformed. The ribs show extensive enlargement at the junction of the bone and cartilage. The line of ossification is quite irregular.

From a colored boy, two years old, with very marked sinking in of the sternum and contraction of the chest. The autopsy showed collapse of the lung with extreme bronchitis. 1844. CHILDREN'S HOSPITAL.

1576. **Bones. Rachitis.** The bones of the leg partly macerated. The epiphyses are markedly enlarged and the shafts are flattened and extremely atrophied so that the distinction between the head and shaft is very marked. From a girl 10 years old, who had had the disease since she was six years old. 1859. Dr. C. D. Homans.

8029. **Bones. Rachitis.** A section through the lower end of the tibia and fibula showing the irregular manner of ossification and increased zone of bone formation.

From a child.

8594. **Hip Joint. Rachitis of Adolescence.** Part of the pelvis and femur, dried.

The head of the femur is tapering and flattened, and the neck is partly covered by an overhanging bony ridge. On section, it shows the lines of the neck in their normal directions. The appearances suggest a malformation in the ossification of the head. The acetabulum is partly filled with fibrous tissue. Dr. W. T. Coucilman.

10172. **Ribs. Rachitis.** Cast of the chest of a child 2 years old, showing nodular enlargement at the junction of the ribs with the cartilage, due to rachitis, so-called rachitis rosary. 1894. Dr. J. E. Goldthwait.

7958. **Femur. Osteotomy.** The lower end of the left femur. A wedge-shaped piece of bone has been removed to remedy deformity of knock-knee.

From a child who died nine weeks afterward from scarlet fever.

Dr. A. T. Cabot.

4355. **Finger. Lateral Flexion.** A finger of the left hand. It is bent laterally at a right angle so as to lie behind the middle and index fingers.

Amputated for pain. 1875. Dr. Henry A. Martin.

1567–72. **Pelvis. Deformity.** Models of deformed pelves, and of which the originals are in the Dupuytren Museum in Paris 1857.

Museum Fund.

3809. **Sternum. Deformity.** A dried sternum strongly bent upon itself at the junction of the second cartilage.

From an adult. 1871. Dr. R. H. Fitz.

SCOLIOSIS.

1550. **Vertebrae. Kypho-Scoliosis.** The whole spine as low as the sacrum with the ribs. There is curvature of the spine both lateral and backward. Also great lateral compression of the thorax with projection of the angles of the ribs posteriorly, on the right side, due to torsion of the bodies of the vertebrae. The ribs were very much atrophied and yielding. 1847.

DR. J. C. WARREN.

6072. **Vertebrae. Scoliosis.** The vertebrae from the neck to the lumbar region, dried.

There is marked deviation in the lower dorsal region and below, with an excessive curvature to the right. The bodies of the dorsal vertebrae are rotated and anchylosed.

From a dissecting-room subject in Paris. 1829–30. DR. G. H. LODGE.

10153. **Vertebrae. Scoliosis.** A spine from the upper cervical to the fourth lumbar vertebra, dried.

It shows a very marked lateral curvature to the right in the dorsal region with some twist of the spinous processes. The bodies of the vertebrae at the most extreme point are markedly wedge shaped. The aorta follows the line of the vertebrae, but lies on the left side of the bodies from its commencement to the lower dorsal region. 1907. DR. THOMAS DWIGHT.

1457. **Vertebrae. Kypho-Scoliosis.** The dorsal vertebrae with portions of the ribs, dried.

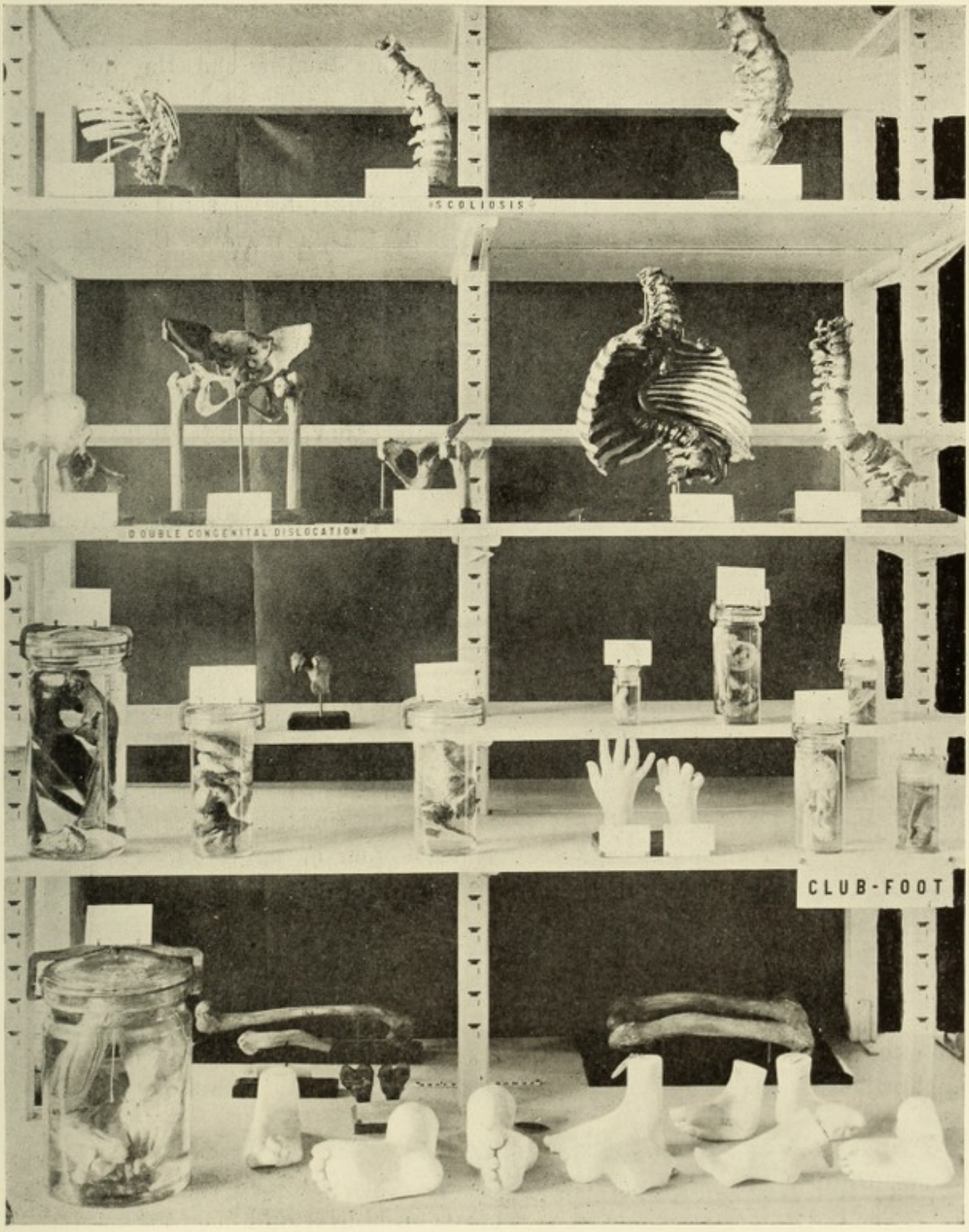
There is extreme antero-posterior curvature caused by almost entire absence of one vertebra with great right lateral curvature and reduction of the bodies, and extreme compression of the ribs. There is great torsion of the bodies in the mid-dorsal region with flattening of the spinous processes.

From a man 24 years old, who died of disease of the heart. 1860.

DR. C. ELLIS.

8309. **Vertebrae. Kypho-Scoliosis.** The entire spine and pelvis, dried.

There is a marked lateral curvature to the right in the mid-dorsal, with



Cabinet No. 21 B.

a sharp, forward bend of the entire cervical and considerable rotation of the bodies of the vertebrae in the upper dorsal region.

7858. **Vertebrae. Kypho-Scoliosis.** One lumbar and the dorsal vertebrae, with the ribs attached, dried.

There is marked lateral curvature to the right in the mid-dorsal region The ribs are very much compressed on the right side and the thorax flattened. The sternum is twisted to the left. One or two upper, dorsal vertebrae show very slight rotation. J. Mason Warren Collection.

1549. **Vertebrae. Scoliosis.** Six dorsal and three lumbar vertebrae, dried.

There is marked curvature to the left with a slight twist of the bodies, especially in the dorsal region. The line of the spinous processes is straighter than that of the bodies. The structure of the bone is very light. 1847.

Dr. J. C. Warren.

8283. **Vertebrae. Scoliosis.** A cast of the three lower dorsal and all of the lumbar vertebrae.

There is a marked curvature to the left with rotation of the bodies of the vertebrae, with slight deviation of the spinous processes. 1891.

Dr. Buckminster Brown.

1548. **Vertebrae. Kypho-Scoliosis.** Eight dorsal and three lumbar vertebrae, dried.

They are so sharply curved at the ninth dorsal that the spine seems almost doubled upon itself. The ninth dorsal is only six millimetres in thickness upon the concave side. The processes and laminae of four of the vertebrae are co-ossified and the structure of the bone is very light, as if from interstitial atrophy. There is a twist of the bodies of the upper dorsal and lower lumbar vertebrae in opposite directions. 1847. Dr. J. C Warren.

9747. **Vertebrae. Torsion.** Four lumbar vertebrae showing marked rotation on the axis with deviation of their spinous processes. The laminae and articular surfaces on one side are very much smaller than on the other.

10218. **Vertebrae. Spondylolisthesis.** The last three lumbar vertebrae with the sacrum and pelvis, dried.

The body of the last lumbar vertebra is pushed forward upon the sacrum owing to the absence of union of the cartilage with the bone. When fresh the joint could be opened for about one centimetre. The ilio-lumbar ligaments

have dragged forward and downward. The posterior lateral segments of the last lumbar vertebra have separated from the body and open widely behind The canal of the sacrum is widely open throughout its entire length, and the sacrum itself is very strongly curved. The iliacus muscle on the left side was partially ossified and attached to the ilium (myositis ossificans.) The acetabulum on the right side is rather large to fit the head of the femur.

From an insane woman 35 years old, who died from general paresis. There was nothing abnormal noticed about her position or gait during life. 1909. Dr. Z. B. Adams.

CONGENITAL DISLOCATION.

9908. **Hip Congenital Dislocation.** The pelvis and both femora, in fluid.

There is a lack of development of the acetabulum and cotyloid ligament with slight tapering of the head of the femur. These factors rendered possible abnormal mobility of the femur in its socket and consequently an abnormal attitude of the extremities.

From a malformed foetus, 1903. DR. SAMUEL ROBINSON.

10088. **Hip. Congenital Dislocation.** The pelvis and both femora, in fluid.

There is great contraction of the capsule at the neck which shows the difficulty of reduction without incision.

From a child two years old. Both the hips were operated upon by manipulation unsuccessfully. Later the left hip was cut down upon and successfully reduced. Death followed six months later from whooping cough.

DR. E. H. BRADFORD.

10088–1. **Hip. Congenital Dislocation.** Half of the pelvis and one femur, in fluid.

It shows the anomalies of the capsule in a case of congenital dislocation.

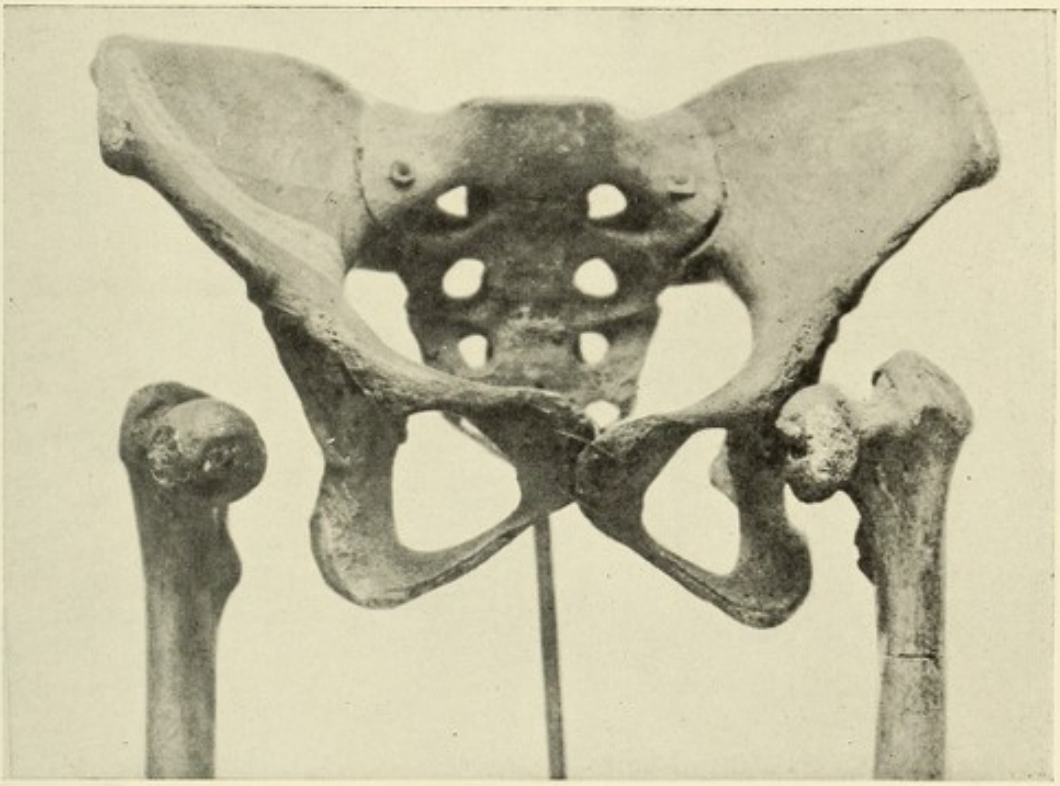
From a child who was not operated upon. DR. E. H. BRADFORD.

8593. **Hip Joint. Double Congenital Dislocation.** The pelvis and both femora in fluid.

The heads of both bones are dislocated backward and upward, and there has been formed about them a new socket, which is partly fibrous and muscular. On one side an attempt has been made to overcome the deformity by making a new socket for the head. The obstacle to bringing the bone into its new position was the resistance offered by the anterior part of the capsular ligament (Y ligament of Bigelow).

From a child nine years old who died from diptheria one month after operation. 1894. DR. E. H. BRADFORD.

1418. Hip. Congenital Dislocation. The pelvis and both femora, dried.



1418. Hip. Congenital Dislocation.

The necks of both femora are very much reduced in length standing off from the shaft at a right angle, and end in irregularly rounded knobs, rather than proper heads. The acetabulum is irregular and quite shallow but does not present any evidence of inflammation.

From a middle aged woman. 1863. DR. D. W. CHEEVER.

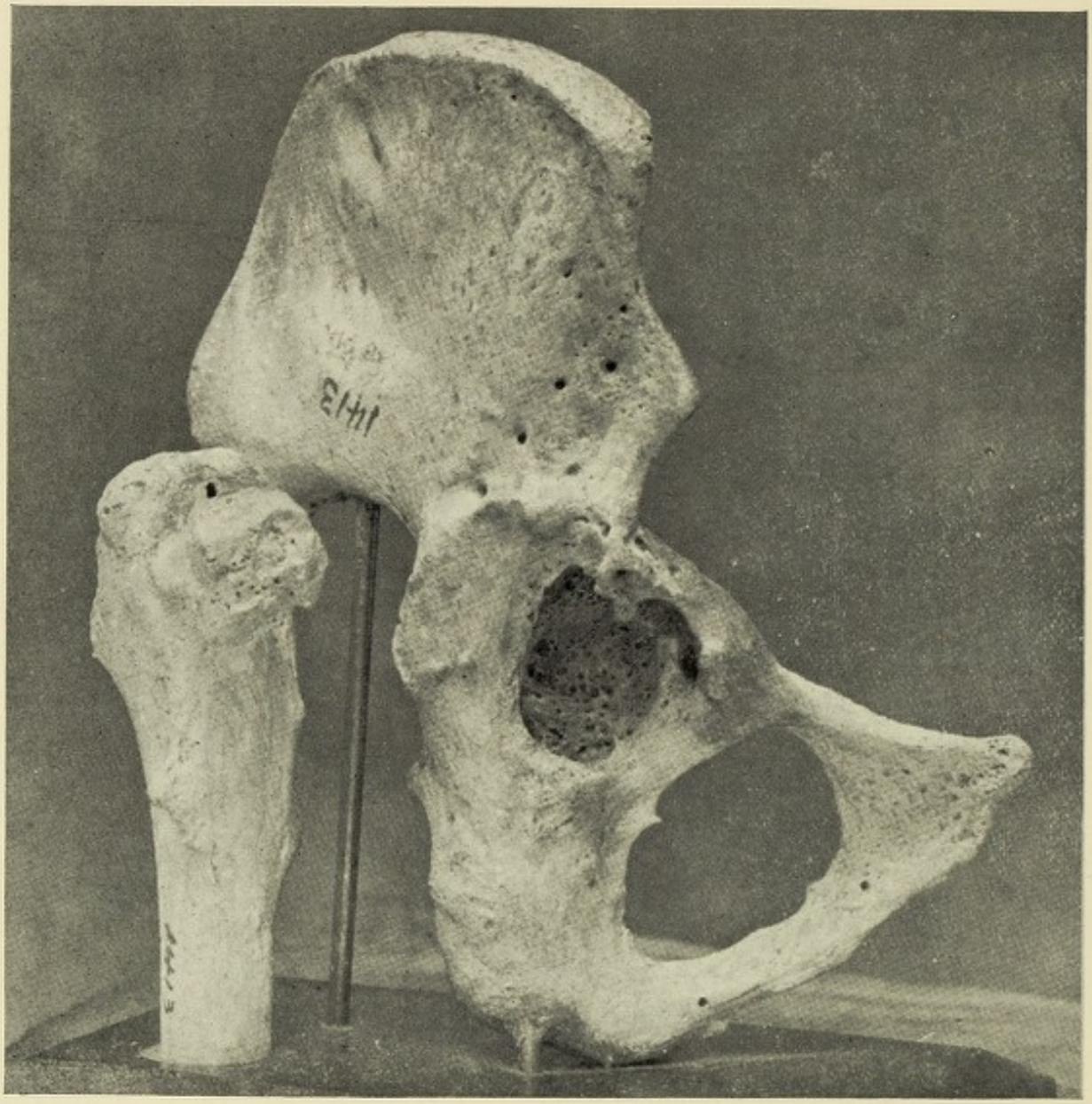
6567. Femur. Congenital Dislocation. The head and neck of the femur.

The neck is quite short and terminates in an irregular enlargement with small rounded elevations especially along the edge, but without any proper head.

From a woman 50 years old. 1853. DR. SAMUEL CABOT.

1413 Hip. Congenital Dislocation. (See page 32.) The os innominatum and femur, dried.

The os innominatum is very thin and light. The cotyloid cavity is irregular in shape. Superiorly, and somewhat posteriorly to its rim is an articu-



1413. Hip Joint. Congenital Dislocation.

lating surface, which was covered with smooth cartilage. The femur is atrophied and the head of the bone has disappeared, and about 2 cm. of the neck remains irregularly rounded at its extremity.

From a woman 60 years old. 1858. Dr R. M. Hodges.

5200. **Hip. Injury.** A portion of the hip bone and femur.

The acetabulum is small, irregular and shallow, and the dorsum of the ilium somewhat hollowed, but without the least appearance of a new socket. About one-third of the femur remains irregularly flattened, and the neck is much shortened.

From a woman 59 years old who received injury at birth. 1840.

Dr. Homans.

CLUB FOOT.

1664. Tibia. Agenesis. A cast of the left foot and leg, from an infant three months old.

The tibia is wanting. The fibula is bent to a semi-circle so that the great toe was in contact with the inside of the knee. Tendo achillis and tibialis anticus and posticus cut, and a great variety of mechanical appliances used. Six months later tibialis anticus again cut.

1665. The same case as in No. 1664 at the end of seven months, when the child went home and walked on the sole of the foot.

Deficiency of the tibia supplied by external support, and the length of the leg by an addition to the shoe. 1865. DR. BUCKMINSTER BROWN.

4948. Foot. Talipes Equino-Varus. Both legs and feet of an infant, in fluid. They have been dissected for comparison.

The bones of the tarsus of the left foot (varus) are similar to those of the right, but their centres of ossification less fully developed. The neck of the astragalus is small, round and placed at a greater angle with the body. 1880.

DR. W. L. RICHARDSON.

7122. Foot. Talipes Equino-Varus. The foot and leg from a new-born infant, in fluid, showing a marked degree of malformation.

A section has been made through the ankle laterally to show the position of the bones. 1850.

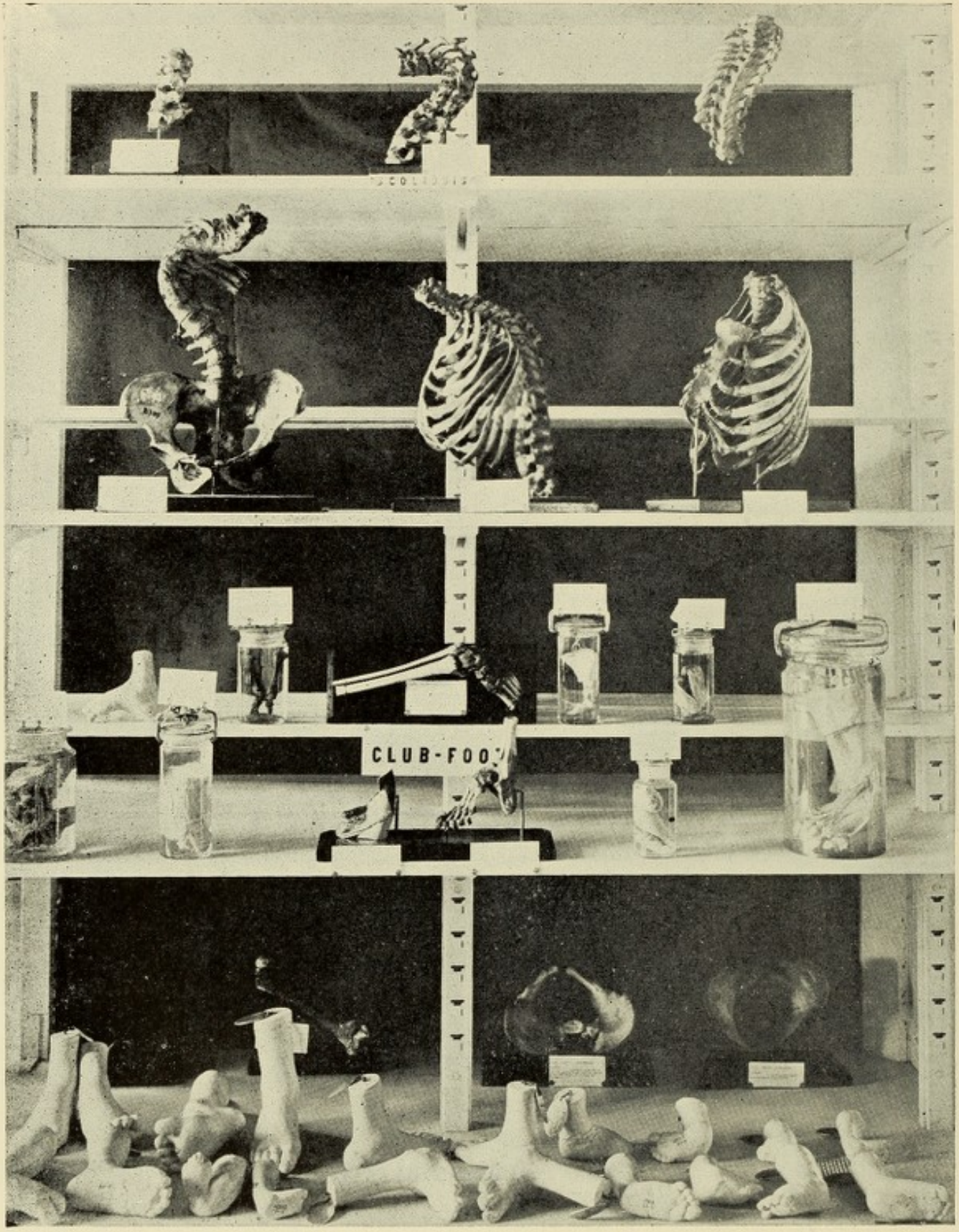
7736. Foot. Talipes Varus. The foot and lower leg from a new-born infant, in fluid.

A section has been made through the ankle joint laterally to show the relations of the bones.

8056. Foot. Talipes Equino-Varus. A section through the leg laterally, in fluid, showing the abnormal position assumed by the bones.

8056 A. Dissection of the right foot showing the shape of the bones and disposition of the tendons.

From an infant. 1886. DR. C. L. SCUDDER.



Cabinet No. 21 C.

8103. Foot. Talipes Equino-Varus. A dissection, in fluid showing the contraction and shortening of the muscles with malformation of the bones.

From a child at term. DR. C. L. SCUDDER.

9349. Foot. Talipes Equino-Varus. Both feet, in fluid.

One has been cut in parallel sections to show the relations of the bones. The other is dissected to show the relations of the tendons and muscles. In both the obliquity of the mid-tarsal joint is seen.

From a still-born child.

1641. Club Foot. Talipes Equino-Varus. Cast of the left foot of an infant showing an extreme case. 1863. DR. BUCKMINSTER BROWN.

10163. Foot. Talipes Equino-Varus. Cast of the left foot before and after treatment.

The foot is turned in and the weight of the body is borne on the outer surface.

The second cast shows the results of three months' treatment. The foot is in good position and the weight is borne squarely upon the sole.

From an infant, 2 years old, with double congenital talipes.

DR. BUCKMINSTER BROWN.

10165. Foot. Talipes Equino-Varus. Cast of the right foot showing a marked case of deformity.

A second cast of the same foot showing a good result after treatment.

From an infant. DR. BUCKMINSTER BROWN.

10166. Foot. Talipes Equino-Varus. Cast of right foot before and after treatment

A very marked case of varus with the foot turned in and the weight borne on the outer surface.

A second cast shows the same foot after treatment in good position.

From an infant 3 months old. DR. BUCKMINSTER BROWN.

10167. Foot. Talipes Equino-Varus. A cast of the right foot.

There is an extreme degree of equino-varus, the sole of the foot being turned inward at nearly a right angle.

10167 A. A cast of No. 10167 after treatment, showing the foot in a fairly good position.

From an infant. DR. BUCKMINSTER BROWN.

10169. Foot. Talipes Equino-Varus. Casts of both feet before and after treatment.

They show a marked degree of varus with callus over the outer surface

The second cast shows the result of treatment. The feet are both alike and in good position.

From a child. DR. BUCKMINSTER BROWN.

4696–7. Foot. Varus. Casts of both feet showing extreme and equal amount of varus. 1876.

From a child 4 years old. DR. CHARLES B. PORTER.

1642. Foot. Varus. Cast of the right foot showing an extreme case of varus.

The foot is bent inward and flexed so that there is a great callus on the outer and posterior surface.

1643. Cast of 1642 eighteen months after treatment, showing a very good result.

From a boy 5 years old. DR. BUCKMINSTER BROWN.

1649–50. Foot. Talipes Equino-Varus. Cast of the right and left foot from an extreme case.

The bones of the dorsum are very prominent and the toes over-ride each other.

1651–52. Casts of the above feet after operation showing very favorable results.

From a child 8 years old. 1863. DR. BUCKMINSTER BROWN.

1644. Foot. Varus. A cast of a foot showing an extreme case of varus in which there is a longitudinal folding of the sole, so that the great and little toes are brought almost in contact. The prominence of the astragalus is also shown. Both feet were affected.

From a child.

1645. Cast showing the same foot (1644) twelve years afterward. The man, meanwhile, had been a sailor, and stated that he had never experienced any inconvenience from his feet. There was very little, if any, trace of the distortion.

1654 A. Foot. Varus. Cast of the other foot (1644) which was similarly affected, twelve years after treatment. 1863.

DR. BUCKMINSTER BROWN.

1646–7–8. **Foot. Talipes Equino-Varus.** Three casts of the right foot. The first shows a marked case of equino-varus.

1647. The foot immediately after treatment.

1648. The foot thirteen years after treatment. The last two casts show remarkably good and persistent results.

From a child. Dr. Buckminster Brown.

6370. **Foot. Varus.** A cast of the left foot from a young adult, showing a moderate degree of varus.

6371. Cast of the same foot (6370) after treatment. Dr. Parkman.

8092. **Foot. Talipes Equino-Varus.** A dissection of the left foot. There is extreme retraction of the tendo Achillis. The metatarsal bones are nearly at right angles with the general line of the tarsus, and the bones of the phalanges are retracted so as to be at right angles to the metatarsus.

From a laborer, not an idiot, but a "crank." Dr. John C. Munroe.

1633. **Foot. Talipes Equino-Varus.** Cast of the right foot and ankle.

An extreme case, showing a large callus on the dorsum of the foot, on which the weight was borne.

1634. A cast showing the result of operation upon 1633.

There is still a moderate degree of varus.

From a man 19 years old. 1847. Dr. Geo. Hayward.

7923. **Foot. Talipes Equino-Varus.** The lower leg and foot, in fluid.

It has been dissected and shows the relations of the ligaments.

From an adult woman.

1637. **Foot. Talipes Equino-Varus.** Cast of the right foot showing extreme varus.

Callosity over the tarsus, which was often much inflamed during two years. The limb was useless and troublesome and was amputated above the ankle.

From a female 34 years old.

1638. The foot (1637) dissected.

It shows the condition and action of the muscles and plantar fascia. 1860. Dr. H. J. Bigelow.

10221. Foot. Talipes Equino-Varus. A cast of the right foot.

It was turned inward to such an extent that the weight was borne on the outside edge. The great toe was turned outward and lay beneath the second toe. A congenital case.

From a woman 38 years old who was operated upon by forcible wrench-correction and tenotomy. The skin was torn on the under side, but healed well under aseptic treatment.

10221 A. A cast taken four months later showing the foot in good position. DR. E. H. BRADFORD.

5297. Foot. Paralytic Varus. The bones of the lower leg and foot.

There is marked flexure of the foot inward, with great alteration of the tarsal bones and articular surfaces.

From a woman 25 years old who, when four years old received an injury to her head. Three weeks later had numbness in foot and pain which continued for two years. The limb was always smaller and shorter after this. On account of its being an incumbrance the patient desired its removal. 1837. MASSACHUSETTS GENERAL HOSPITAL.

3863. Foot. Talipes Calcaneus. The foot and leg, in fluid.

The dorsum of the foot is in apposition with the front of the leg.

From a new born child. 1872. DR. G. F. WATERS.

10208. Foot. Calcaneo-Valgus. Two casts of the left foot before and after treatment.

The articular facette does not enter into its position in the ankle joint, but with its rounded internal face and with the scaphoid forms a projection on the inside of the foot. It is seen that the front part of the foot is higher than the heel, otherwise it is calcaneo-valgus.

The second cast shows the result four months after the commencement of treatment The child was able to walk on the soles of the feet.

From a girl 11 years old who had also spina bifida.

DR. BUCKMINSTER BROWN.

10204. Foot. Metatarso-Cuneiform Cavus. A cast of the left foot.

There is a marked prominence over the instep with considerable hollowing of the sole and obliquity of the toes to the left.

From an adult. DR. E. H. BRADFORD.

1657. **Foot. Pes Equinus.** Two casts of the right foot.

The metatarsus was doubled and twisted upon the dorsum so as to form at the line of union a sharp and prominent ridge upon the top and side of it. The astragalus was luxated and very much diminished in size. The toes were pressed backward so that they were in contact with the back of the foot.

1658. The second cast of 1657 shows the result of treatment, the foot being in good position. 1863. DR. BUCKMINSTER BROWN.

1659. **Foot. Pes Equinus.** Cast of the right foot showing great contraction of the tendo Achillis with flexure of the toes upward.

From a girl 14 years old who had paralysis of the right lower extremity when three years old. General atrophy of the limb with a shortening of 4 cm.

1660. Cast of 1659 after treatment showing very good results.
DR. BUCKMINSTER BROWN.

1661. **Foot. Talipes Equinus.** A cast of the left foot before treatment

It shows great extension, with a slight inward twist, the weight having been borne on the ball of the foot.

1662. A cast of 1661 after treatment.

The foot in good position and the weight borne upon the sole.

From a youth. DR. BUCKMINSTER BROWN.

10210. **Foot. Paralytic Equinus.** A cast of a foot before treatment, showing a marked extension of the foot and toes, the weight being borne on the ball of the foot. The toes are turned sharply upward.

10210 A. A second cast showing a good position with the weight borne on the sole.

From an adult. DR. BUCKMINSTER BROWN.

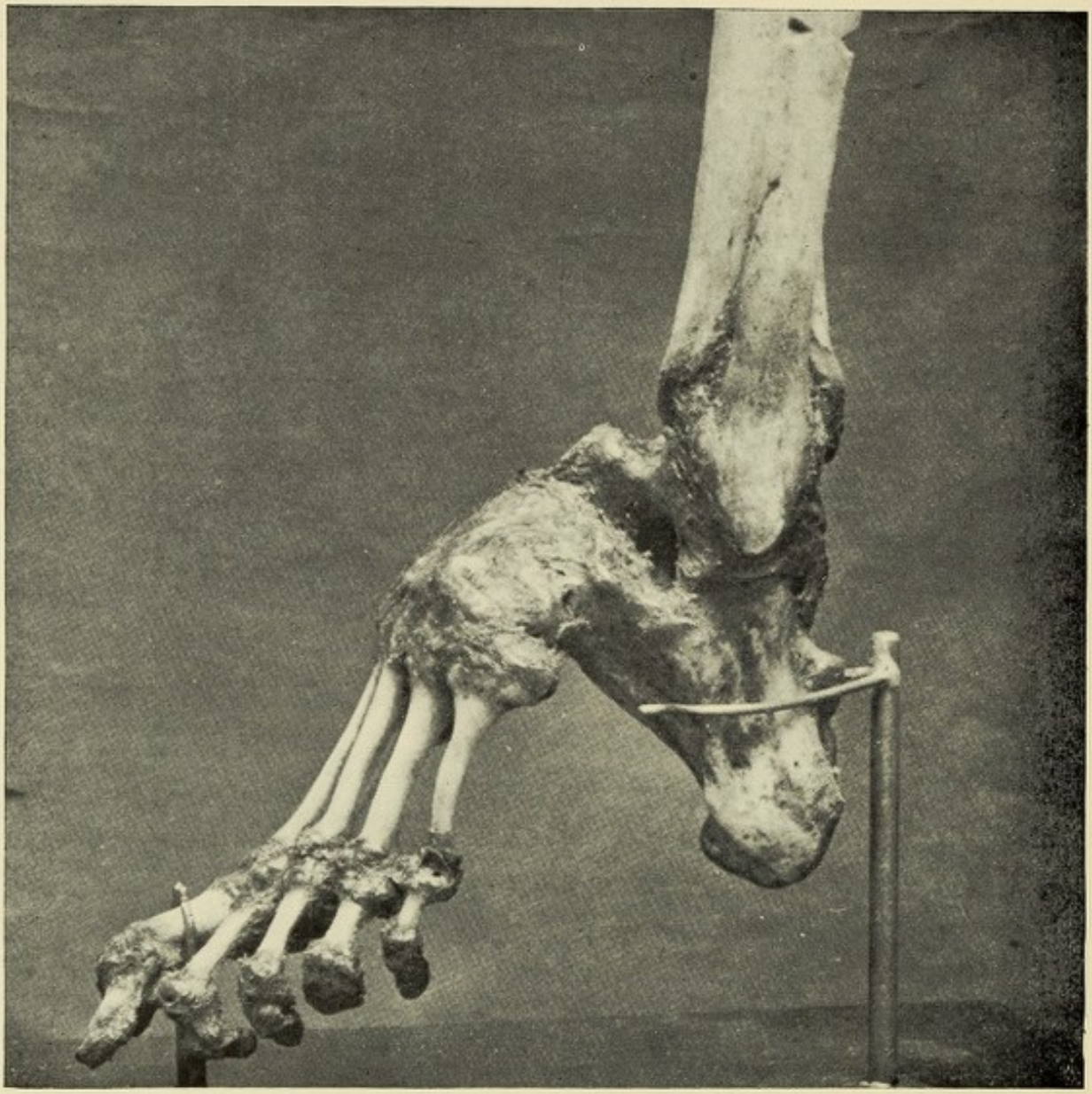
10212. **Foot. Talipes Equinus.** A cast of the right foot before treatment.

It shows a marked degree of extension of the foot, the toes are spread widely apart, and the weight borne upon them and the ball of the foot.

10212 A. A second cast, which shows result of treatment which is fairly good, the foot not being in exactly a straight line with the leg, but turned slightly outward.

From a child. DR. BUCKMINSTER BROWN.

3211. **Foot. Chinese. Distortion.** A ligamentous preparation of the bones of the foot of a Chinese woman.



3211. Foot of a Chinese Woman.

It is about 13 cm. long. The os calcis makes a right angle with the rest of the foot; its position is very nearly perpendicular, and its form quite irregular outwardly and at the insertion of the tendo Achillis. The bones are small, but otherwise the foot is well formed, with the exception of some obliquity of the metatarso-phalangeal articulations.

3212. The bones of the other foot.

3213. A shoe worn by a Chinese woman. 1863. Mr. Geo. Sceva.

1449. Foot. Injury. A cast of the right foot showing great distortion, so that the patient must have walked on the inner surface entirely. The result of an old injury.

1450. A cast of 1449 after operation. 1867. DR. R. M. HODGES.

10092. Feet. Phillipinos. A series of casts of native Phillipinos taken with and without the weight of the body on the foot:

1. Morro.
2. Vargobo.
3. Ignorotti Bantoc.
4. Negritto. 1905. DR. E. H. BRADFORD.

8079. Femur. Curvature. Osteotomy. The left femur, dried. There is marked curvature and supracondyloid osteotomy had been performed which cured the deformity. There are no marks of the operation. From a child. DR. W. T. BULL.

OSTITIS DEFORMANS.

1580. **Tibia. Curvature.** A tibia, dried.

There is very marked lateral, inward and forward curvature, so that the lower articular surface is quite oblique to the upper one. 1847.

Dr. J. C. Warren.

1578. **Tibia. Curvature.** Five tibiae dried from adults showing various degrees of flattening and curvature. 1859. Dr. J. C. Warren.

8527. **Femur. Tibia. Fibula. Curvature.** The bones of the leg, dried.

They show marked anterior curvature, and are thick and heavy.

From a man 88 years old. Dr. Thos. Dwight.

8528. **Tibia. Curvature.** Both tibiae, dried.

There is marked anterior curvature. The bones are rather short, thick and heavy.

From a man 85 years old. Dr. Thos. Dwight.

1573. **Pelvis. Asymmetry.** A pelvis dried.

The left sacro-iliac synchondrosis anchylosed, causing marked lateral distortion. Otherwise, nothing else abnormal was observed.

From an adult female. 1856. Dr. R. M. Hodges.

1574. **Pelvis. Asymmetry.** A pelvis, dried.

There is lateral distortion with partial anchylosis upon each side between the sacrum and ilium.

From an adult. 1860. Dr. R. M. Hodges

JOINTS.

SPONDYLITIS DEFORMANS.

1332. **Vertebrae.** Seven cervical vertebrae, dried.

The bodies and articulating processes are extensively fused, with considerable deposit of new bone, and a strong inclination of the atlas toward the left side. Bones quite solid.

From an adult. 1863. DR. O. W. HOLMES.

5130. **Vertebrae.** Six cervical vertebrae, dried.

There is exostosis from the edges of the bodies of the last four overlapping the one below, and firmly uniting the last two. DR. GEO. C. SHATTUCK.

10174. **Vertebrae.** Six cervical vertebrae, dried.

The bodies are irregularly distorted by an overlapping new growth of bone along the anterior edges. There is also a slight growth on the odontoid process uniting it to the atlas.

1333. **Vertebrae.** Eight dorsal vertebrae, dried.

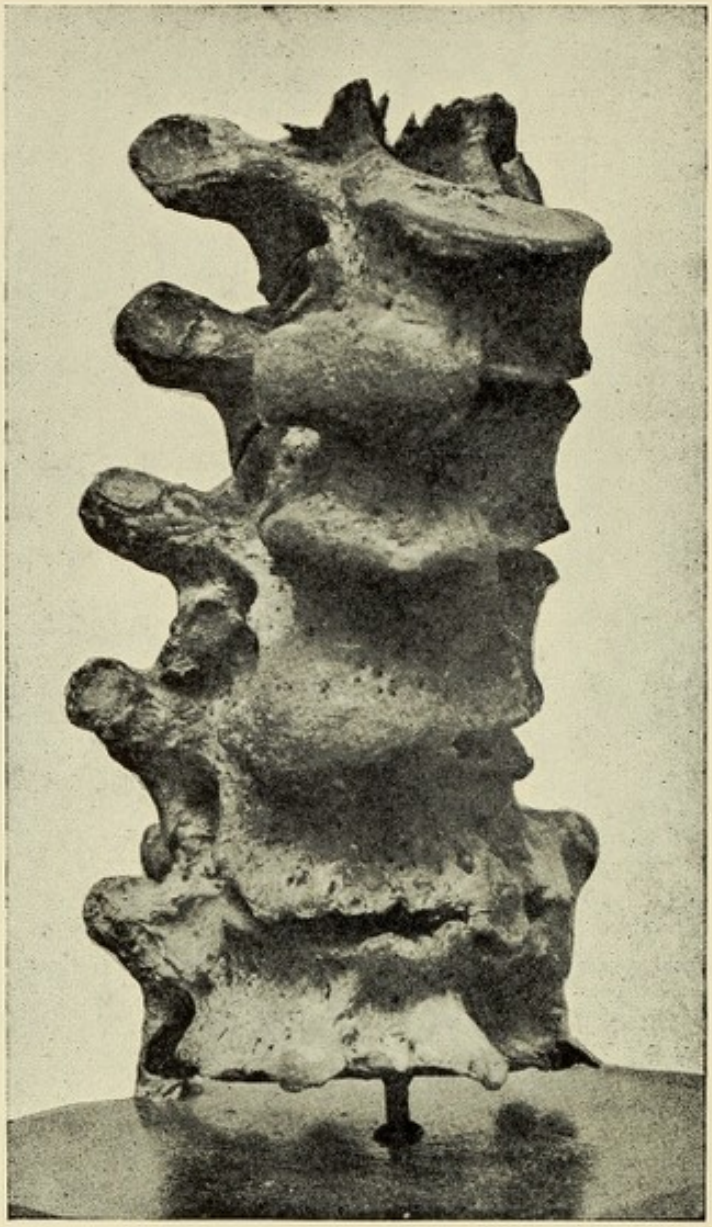
The bodies are anchylosed along the front and toward the right side by a narrow, strap-like growth of new bone. 1874. DR. J. C. WARREN.

1341. **Vertebrae.** Six dorsal vertebrae, dried.

The edges of the bodies and heads of the ribs are co-ossified. There is considerable antero-posterior curvature (kyphosis). 1847.

DR. J. C. WARREN.

5131. **Vertebrae.** The bodies of five dorsal vertebrae, dried.



5131. Spondylitis Deformans.

They are strongly anchylosed by a growth of bone from their edges, 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.

1334. **Vertebrae.** Five dorsal and two lumbar vertebrae, dried.

There are exostoses from the edges of the bodies projecting as spur-like processes, with partial anchylosis.

From a laborer about 60 years old. When eighteen years old, he fell

down the hold of a vessel and afterward had trouble in his back, with general rheumatism, dying at last of cardiac disease. 1866. Dr. J. S. Jones.

1335. **Vertebrae.** Three lumbar vertebrae, dried.

A thick, projecting mass of new bone unites two of the bodies upon the front and toward the leftside. 1847. Dr. J. C. Warren.

1337. **Vertebrae.** Two lumbar vertebrae.

The bodies are anchylosed and are especially interesting on account of the extensive fusion of the articulating processes upon one side.

From an adult. 1847. Dr. J. C. Warren.

1458. **Coccyx.** A longitudinal section of the dried bones.

The coccyx is co-ossified with the sacrum which has a marked anterior curvature. 1847. Dr. J. C. Warren.

ARTHRITIS DEFORMANS.

9976. **Bones.** The scapula, bones of the arm and femora, dried.

These are all quite remarkable for their great size, length and extreme lightness. The cortex is reduced to a thin shell. The articular surfaces are irregularly thickened and eburnated. The heads of the bones are greatly enlarged.

1344. **Scapula.** The left scapula, dried.

The acromion process is considerably lengthened by the addition of three pieces of new bone which are quite separate; and on the under side of these, and of the process, is a very marked articular surface. The coracoid process is enlarged and eburnated at the extremity, and the glenoid cavity is enlarged, though scarcely eburnated.

From a male. The fingers were deformed as if from rheumatism. 1863.

DR. D. W. CHEEVER.

1345. **Elbow.** Bones of the elbow joint, dried.

There is a growth of new bone about the articular surface of the humerus, and which also partly fills up the olecranon fossa. The lower extremity of the other humerus is in very much the same condition. 1860.

DR. R. M. HODGES.

1347. **Elbow.** The bones of the elbow joint prepared in connection with their ligaments.

A very considerable amount of new bone has been deposited about the articular surfaces. There are also several pieces of new bone in the capsular ligament, the largest of which almost equals in bulk the tip of the little finger. The articular surface of the humerus is normal, except that it is slightly grooved. 1860. DR. R. M. HODGES.

1348. **Elbow.** Bones of the elbow, dried.

There is new bone about the articular surfaces with eburnation of the outer portion of the humerus. The articular surface of the head of the radius, anteriorly, looks as if a considerable piece of the bone had been broken away, and, though strongly united, may have caused subsequent inflammation. This surface of the radius, and the corresponding one of the humerus, are some-

what eburnated. The bones are otherwise healthy, as were the wrist and shoulder joints.

From an old subject. 1859. Dr. R. M. Rodges.

1353. **Hip Joint.** The os innominatum and femur, dried.

The head of the bone is greatly enlarged and malformed. A part of the smooth surface is torn away, leaving it rough and porous. The corona is enlarged by new bone which overhangs the neck. The acetabulum shows considerable addition of new bone about the edge, its inner surface is coarsely porous, but nowhere eburnated. 1860. Dr. R. M. Hodges.

1362. **Hip Joint.** A portion of the pelvis and parts of both femora, dried.

The head of the right femur is covered with a porous growth of new bone, and the surface is irregular and eburnated. The acetabulum is greatly deepened and its inner surface is roughened. The left femur shows a little roughening about the insertion of the round ligament. 1863.

Dr. D. W. Cheever.

6089. **Hip Joint.** The head of the femur and pelvis, dried.

The head is very much enlarged by a growth of new bone about its edge, especially on the lower side. The acetabulum is partially filled in one part and deepened in another by a growth of bone.

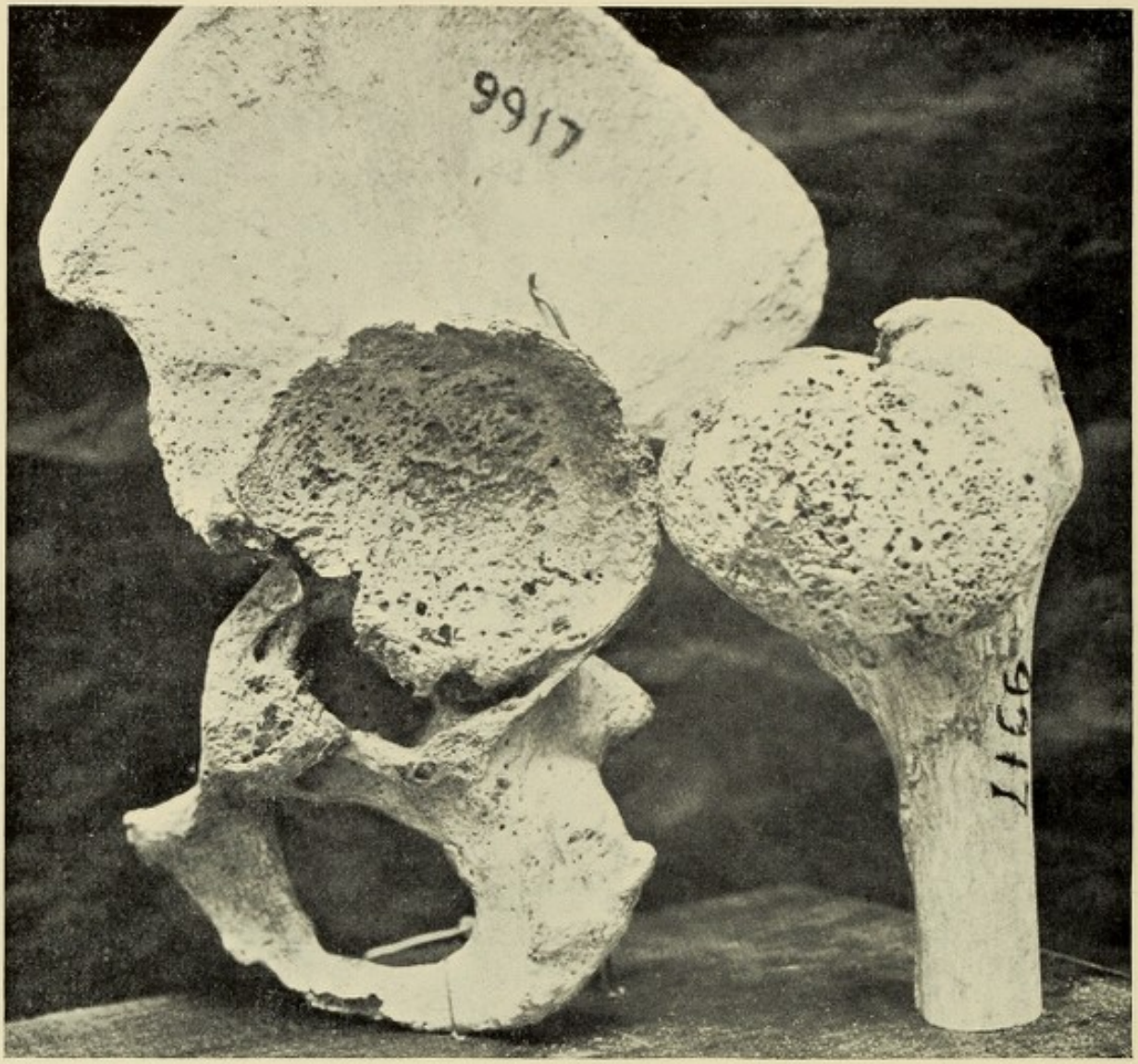
From a woman 63 years old who had a fracture and dislocation of the hip when 14 years old. She was disabled at that time for several months, and was always lame afterward. During the latter part of her life she had almost no rotation of the joint. 1849. Dr. J. B. S. Jackson.

9917. **Hip Joint.** (See page 48.) The os innominatum and upper part of the femur of the left side, dried.

The head of the femur is transformed into a flattened mushroom-like growth of bone, measuring 7.5 by 5 cm. The surface is porous and eburnated. The acetabulum is low, flaring with a growth of new bone and slightly eburnated. 1904. Dr. F. W. Snow.

6710. **Femur.** A part of the femur and pelvis, dried.

The head of the femur is anchylosed firmly in the acetabulum with a formation of new bone about the edge. Dr. Jeffries Wyman.



9917. Hip Joint. Arthritis Deformans.

6711. **Acetabulum** A portion of the os innominatum with the acetabulum, dried.

It is greatly deepened by a growth of new bone about the edges. The inner surface is slightly eburnated. Dr. Jeffries Wyman.

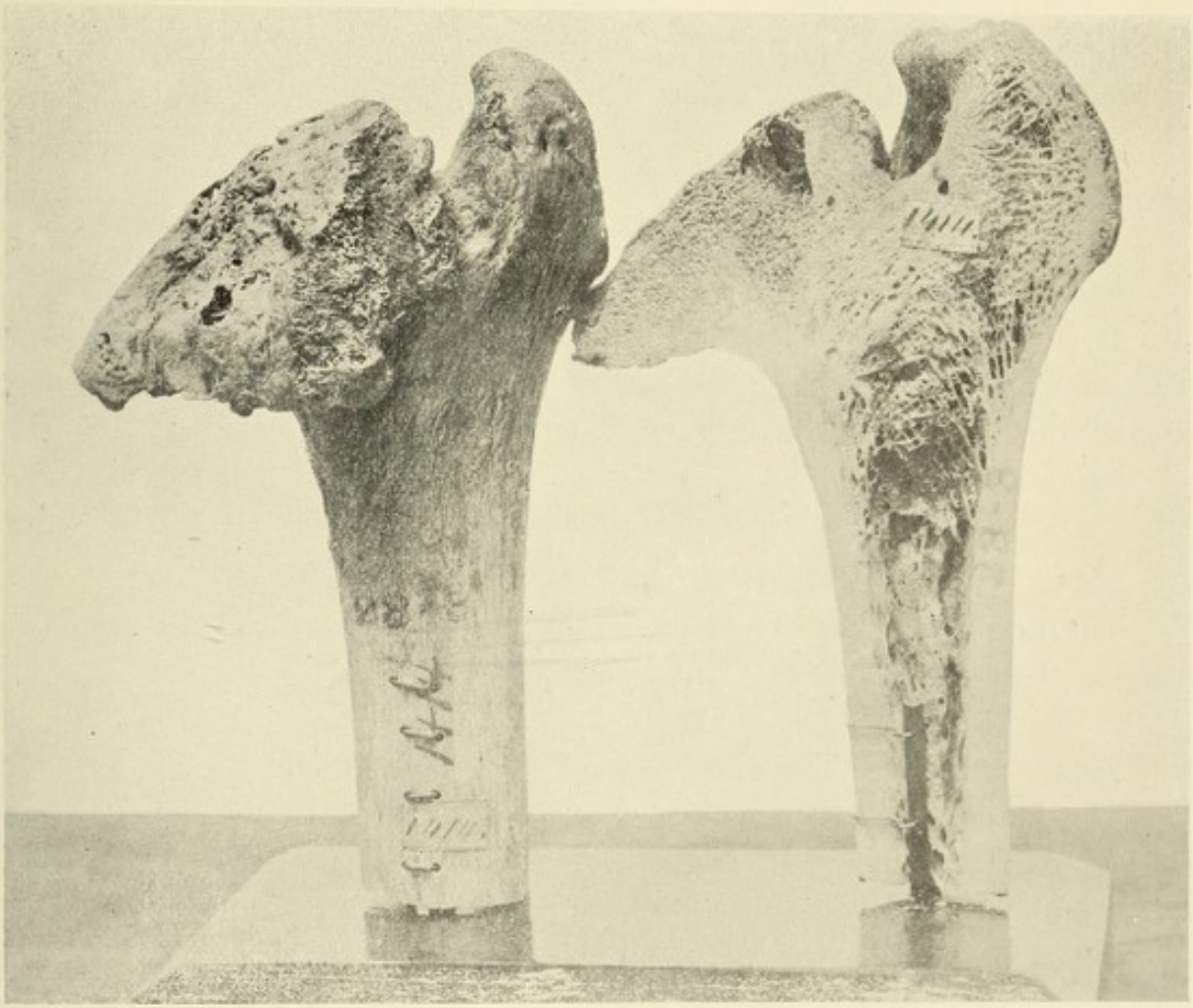
1351. **Femur.** The entire femur, dried.

There is a very great change in the head and neck, none of the head remaining and only a small portion of the neck. The articular surface is altogether below the trochanter, and inclined at an angle of about 45° with the shaft of the bone. It is broad, somewhat convex and porous, but not rough. The edges are everted and irregular. 1847. Dr. J. C. Warren.

1352. **Femur.** The upper portion of the femur, dried.

It shows an interstitial atrophy and great enlargement, with irregularity and flattening of the head of the bone. 1847. DR. J. C. WARREN.

1414. **Femur.** The upper third of the femur, dried.



1414. Femur. Arthritis Deformans.

The articular portion is most remarkably affected. There are remains of the neck, which almost at once enlarges or flares out and terminates in an irregular and somewhat convex surface, about 7 cm. in diameter. This surface, which very much overlaps the neck, has, to a considerable extent, a somewhat smooth and cicatrized appearance, but in it are many holes which look like the result of caries In a cavity just beneath the surface, and nearly as large as the tip of the little finger, was found a curd-like, opaque substance. Otherwise the bone was quite compact and healthy in structure. 1847.

DR. J. C. WARREN.

4918. **Femur.** The upper part of the femur, dried.

The head of the bone is enormously enlarged until it has reached a diameter of 6.75 cm. The outline of the original head, seen on section, is surrounded by a thick shell of bone. The angle with the shaft is normal.

From a woman 76 years old, with a history of injury when 19 years old.

Dr. W. C. Blaisdell.

5213. **Femur.** The upper part of the femur, dried.

The head of the femur is eburnated with a formation of new bone about its edge. There is also an overhanging lip of bone on the side toward the great trochanter.

6581. **Femur.** The head of the femur, dried.

It is elongated and egg shaped, with a growth of new bone about the margin. The head of the bone was so locked into the acetabulum that the edge of the latter was broken in the disarticulation.

From an old woman. Dr. Samuel Cabot.

7641. **Femur.** The upper portion of the femur, dried.

The head is elongated and egg shaped, with a growth of new bone overhanging the neck. The articular surface is eburnated.

7824. **Femur.** The upper part of the femur, dried.

The head of the bone is enlarged, the surface eburnated and there is a marked growth of new bone from the edge overhanging the neck, and on one side completely filling the space between the head and trochanter. 1884.

Dr. S. J. Mixter

9788. **Femur.** The head of the femur, in fluid.

It is greatly enlarged, the bone is dense and the cancellated tissue is replaced by compact bone. The cartilage is destroyed, and the articular surface and neck is covered with thick, rather papillary fibrous tissue. 1902

Mass. General Hospital.

10177. **Femur.** The upper part of the femur, dried.

The head of the bone is elongated by a growth from the edge overhanging the neck, which is also roughened.

9823. Femur. The lower end of the femur, dried.

9823. Femur. Arthritis Deformans.

The edges of the articular surface are marked by an exuberant growth of projecting bone, which is continued upward, forming a broad, flattened area on the anterior aspect of the femur. This is 6 cm. wide by 5 cm. high, and is eburnated and deeply scarred. There is also an area in the middle of the articular surface about 2 cm. in diameter, where the bone is thickened and like porcelain.

9822. Knee-Joint. A knee-joint, in fluid.

It is laid open, showing a thickening and eburnation of the articular surfaces, with proliferation of bone about the edges of the joint.

9344. **Knee-Joint.** The joint, in fluid.

It is opened, showing the cartilage of the femur eroded, and the bones slightly eburnated. The synovial sac is greatly enlarged with papillary-like fringes along its edges. In the lower part the of sac is an abundant deposit of fibrin. 1896. DR. A. T. CABOT.

1364. **Knee-Joint,** dried.

The joint shows an abundant osseous deposit about the edges of the articular surfaces, these last being irregular and to a small extent eburnated 1847. DR. J. C. WARREN.

5248. **Knee-Joint.** The bones of the joint, dried.

There is a firm, bony union between the tibia and femur to which the patella is also attached. There is a narrow slit-like opening in the middle of the union. DR. GEO. PARKMAN.

5251. **Patella.** A patella, dried.

There is a ragged exostosis about the edge of the patella, similar to what is so often seen about the bodies of the vertebrae and the head of the femur.

4305. **Hand.** (See page 53.) The bones of the hand and wrist, dried.

They are extremely light and the articular surfaces are enlarged. The fingers point downward toward the palm, directed toward the cubital edge of the hand. There is growth of bone about the joint, with subluxation of the phalanges and atrophy of the bones.

From an adult. 1874. HENRY W. DEAN. F. W. STACKPOLE.

1359. **Finger.** The bones of the finger in connection, dried.

They show a strong lateral inclination of the terminal phalanx upon the second, but without any appearance of disease. 1859. DR. R. M. HODGES.

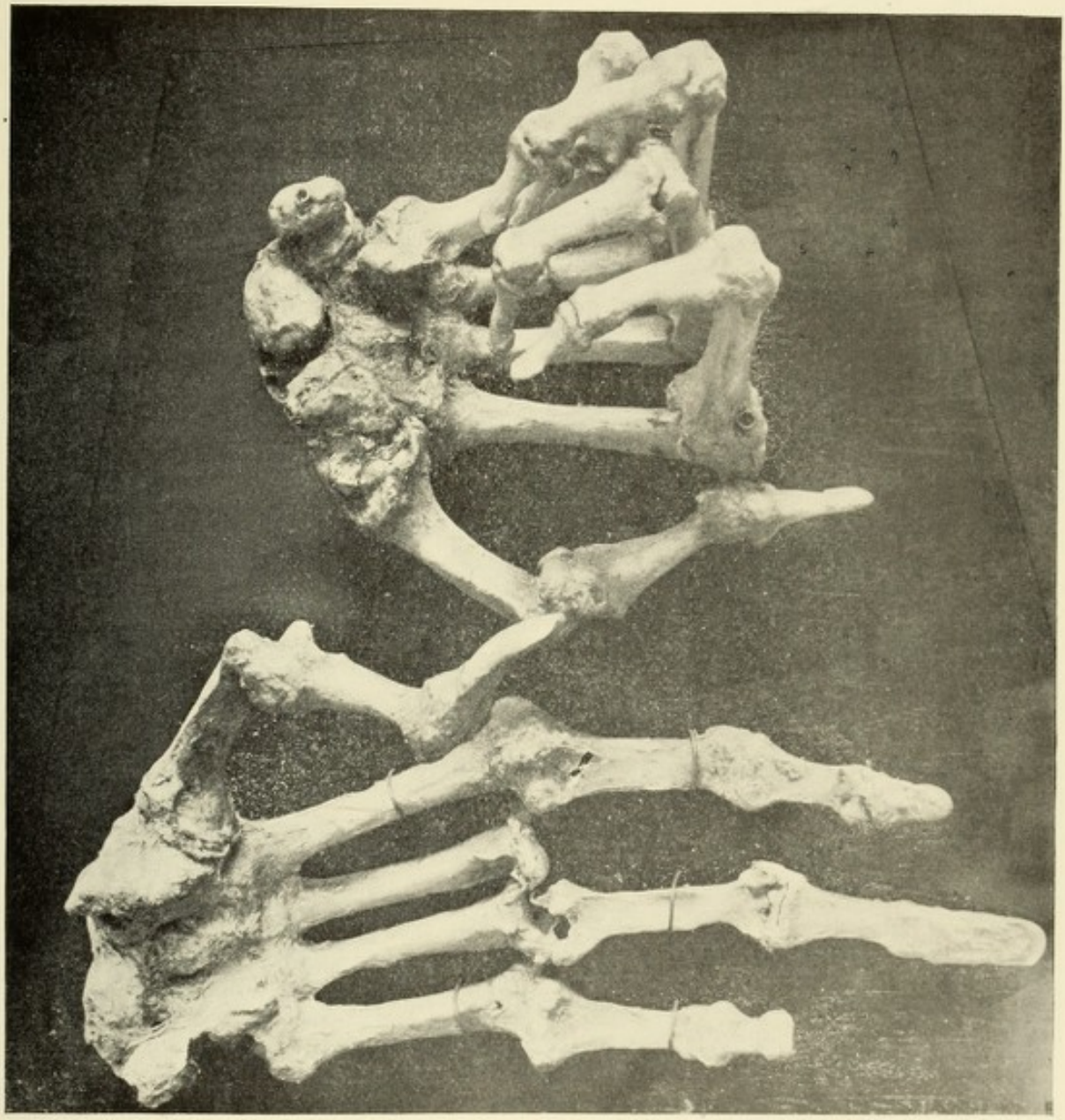
6035. **Finger. Anchylosis.** The terminal phalanges of two fingers

The second phalanx is dislocated upward and forward on the bone in both cases and anchylosed in a new position. In one the two bones form an obtuse angle, and in the other a right angle.

From a woman about 75 years old. Twenty years before she had "bed sores" upon the hand and suffered from them for about two years. 1849. DR. J. B. S. JACKSON.

6377. **Finger.** The phalanges of the finger, dried.

The last two anchylosed with formation of new bone about the joint.



4305. Hand. Arthritis Deformans.

10207. Hands. Both hands articulated and dried.

There is an extensive formation of new bone about the joints of the terminal phalanges which must have greatly impeded their motion. There is also a similar deposit but less extensive at the articulation of the thumb with the wrist. DR. THOMAS DWIGHT.

10206. Foot. An articulated foot, dried.

There are numerous irregular osseous growths over the surface, especially in the neighborhood of the phalangeal articulation.

From a man 45 years old DR. THOMAS DWIGHT.

4744. **Astragalus.** The astragalus, dried.

There is a piece of imperfectly developed bone attached to the upper edge of the articular surface. The joint surface is eburnated and greasy. 1876.

1366. **Astragalus. Os Calcis.** The astragalus and os calcis, dried.

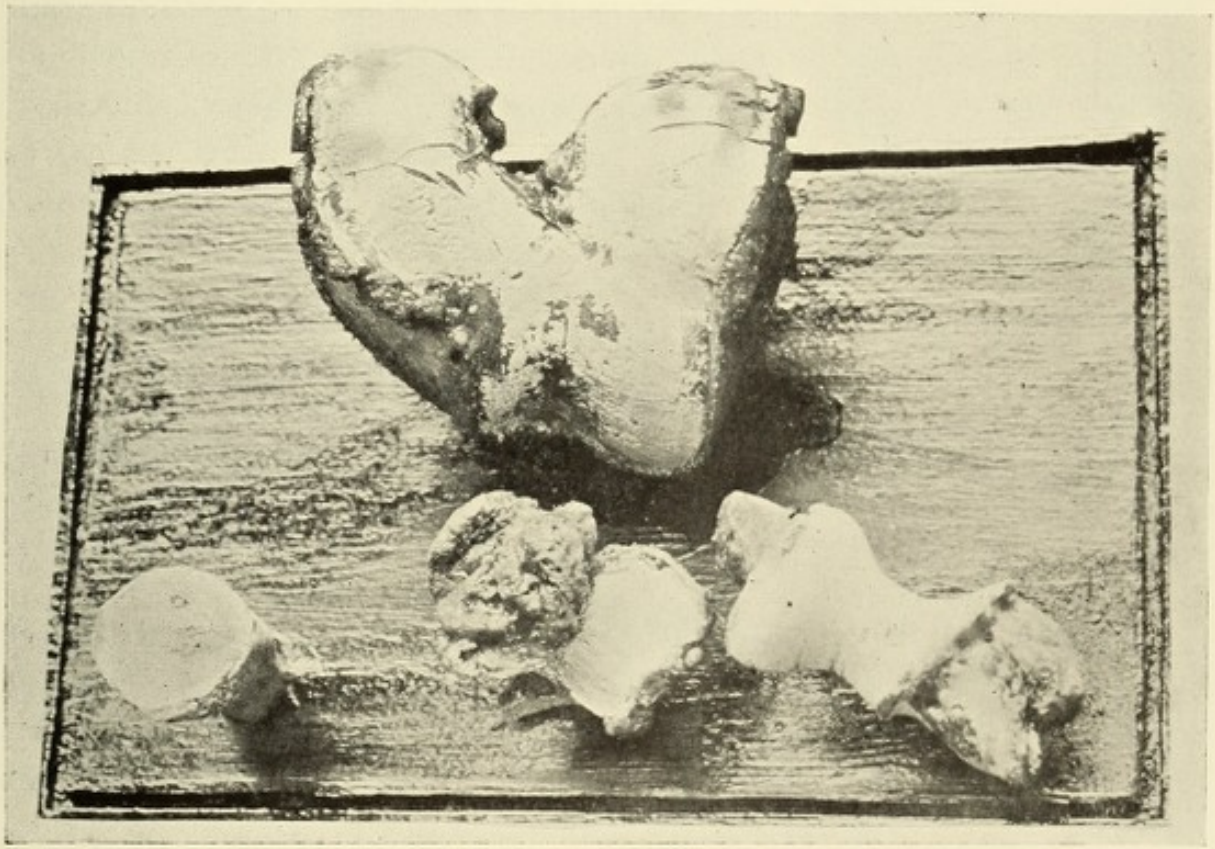
They are partially, but strongly anchylosed, with growths of new bone about the edges of the articular surfaces. 1847. DR. J. C. WARREN.

5134. **Sacrum**, dried.

There is strong anterior curvature of the inferior extremity of the sacrum.

GOUT.

1694. Joints. The bones of the elbow joint and the articular surfaces of the femur, dried.



1694. Joints. Gout.

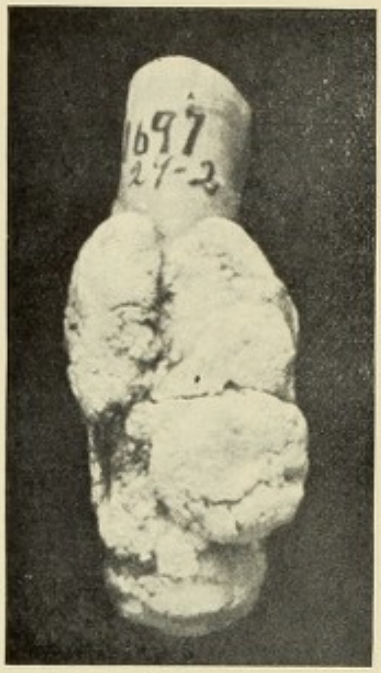
The bones are covered with a white, porcelain-like deposit. It was also found about the ligaments and tendons of the hands. 1860.

DR. R. M. HODGES.

1698. Hand.

Cast in plaster of a hand that was affected with gout. The joints are much swollen and the little finger distorted.

From a man 59 years old, who was in the hospital for fracture. Habits intemperate. Gout not recorded. He had had the disease for years, and in some places the white deposit could be seen through the skin. He also was said to have had general "rheumatism," but it did not prevent him from doing the work of a hostler. 1863. MUSEUM FUND.



1697. Finger. Gout.

1697. **Finger.** The two last phalanges of the finger, dried.

The bones about the articulation are surrounded by a large mass of white cretaceous looking material.

From a man 70 years old, who had been crippled with gout for many years. Numerous chalkstones formed about the fingers, toes and also upon the external ear. This finger had been discharging pus, mingled with earthy matter, and was amputated. 1867. Dr. R. M. Hodges.

9098. **Finger.** The middle finger, in fluid.

It is enlarged, and in the tendon sheath is a mass of urate of sodium the size of a chestnut.

9670. **Finger.**

An irregularly flattened, slightly elongated mass, measuring about 4 cm. with a somewhat lobulated surface. It was made up of urate of sodium and some organic material. Concretions of urate of sodium were removed from other fingers in the same case. 1899. Dr. J. C. Warren.

4950. **Knee-Joint.** Bones of the knee-joint, in fluid.

The articular surfaces of the joint are encrusted with a white deposit, chiefly urate of sodium, continued into the outer layers of the cartilage.

Dr. H. H. A. Beach.

4951. **Astragalus.**

The astragalus from 4950 showing a similar deposit. A section has been made through the bone to show the depth of the infiltration.

Dr. H. H. A. Beach.

6319. **Foot.** Bones of the foot dried.

The articular surfaces are encrusted with a white deposit, chiefly urate of sodium. 1854. Dr. Geo. O. Dalton.

1695. **Toe-Joint.** One of the great toes, in fluid.

There was a gouty deposit upon the articular surface in the form of a fine white powder. There was also, immediately beneath the skin, and over one of the joints, a white pasty substance in an ill-defined cavity about one and a half lines in diameter, with a trace of the same in the neighboring cellular tissue. This consisted of urate of sodium and phosphate of lime, with a little chloride of sodium and a considable proportion of animal matter. Microscopically it had a granular appearance, but no distinct crystals.

From a man 52 years old, of intemperate and dissolute habits, much subject to gout, and who died at the hospital of Bright's disease. 1852.

Dr. J. B. S. Jackson.

SYNOVIAL MEMBRANES.

JOINTS.

1688. **Elbow-Joint. Acute Synovitis.** The joint, dried.

When fresh, the articular surface was as smooth and denuded as it now appears, except to a small extent around the circumference, where there was a thick, red, pulpy structure that it was thought might be the remains of a diseased synovial membrane. The periosteum was also thickened, red and friable for about 8 cm. or more above the joint. There was a free external opening into the cavity of the joint with a large abscess in the neighboring parts.

From a sailor 52 years old who had syphilis. The inflamation of the elbow joint was severe, and fatal on the twenty-fifth day. 1852.

Dr. J B. S. Jackson.

4926. **Elbow-Joint. Synovitis.** The bones of the elbow, in fluid.

The cartilage covering the joint is slightly eroded, the capsule thickened, and over its surface are numerous branching papillary excresences projecting into the cavity of the joint.

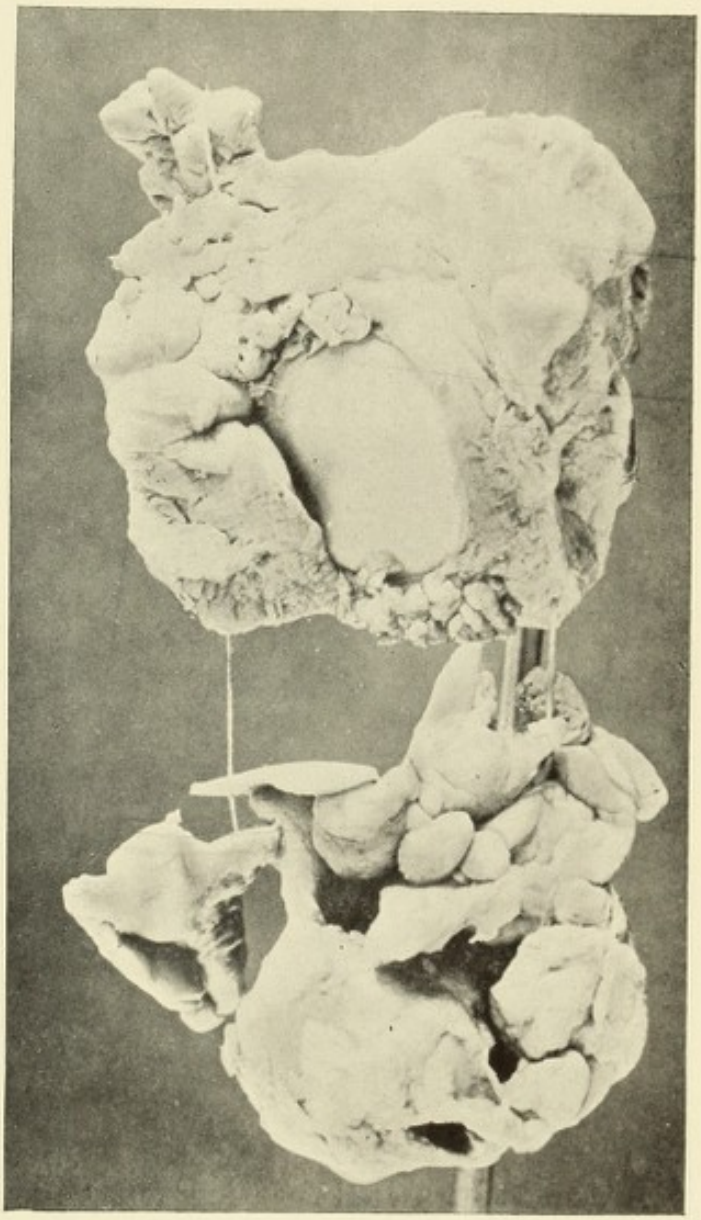
From a man 60 years old. Two months before entrance to the hospital he fell on the ice and struck his elbow. It became red, swollen and very painful. An abcess formed and pus was evacuated. The elbow was excised, followed by good recovery. 1879. Dr. C. B. Porter.

1682. **Elbow-Joint. Free Bodies.** The elbow joint and four loose bodies from it, in fluid.

The bodies are three or four lines in diameter, and as hard as bone, though thinly coated with cartilage. They were quite free in the joint, and the articular extremity of the humerous is seen to be grooved upon the surface, as in a case that is figured by Cruveilhier.

From a middle-aged woman.

9773. Knee Joint. Chronic Proliferating Synovitis. The bones of the knee joint, in fluid.



9773. Knee Joint. Synovitis.

The articular surfaces are surrounded by greatly thickened, polypoid synovial fringes. The cartilage was injected. 1902.

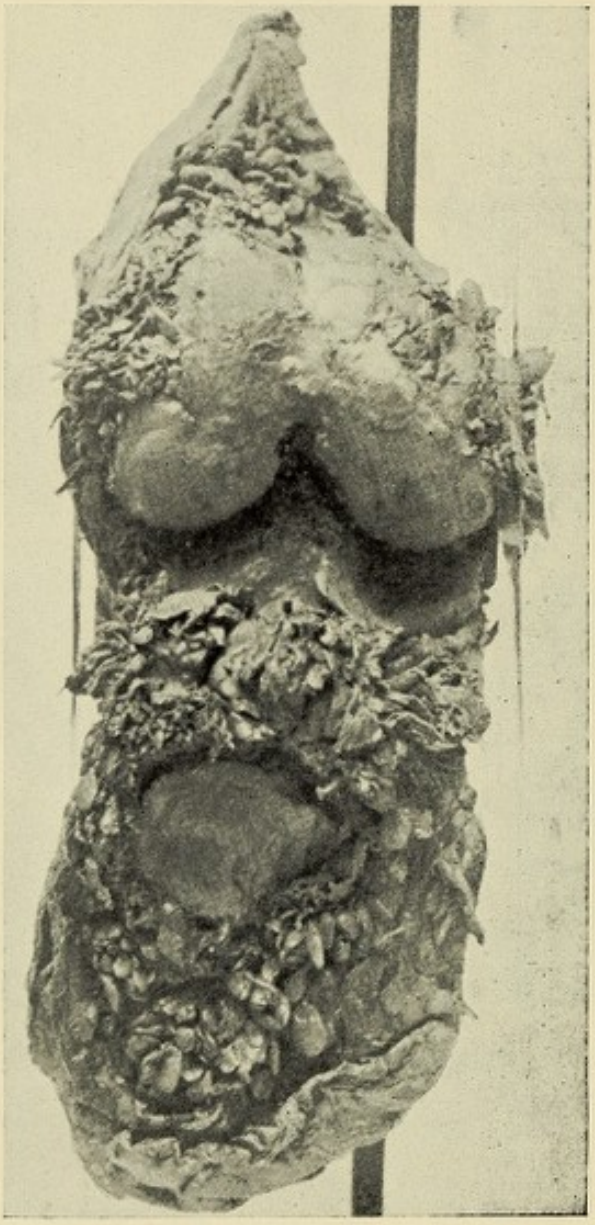
MASS. GENERAL HOSPITAL.

6109. Knee Joint. Villous Synovitis. (See page 60.) The bones of the knee joint, in fluid.

There are large numbers of fatty and fibrous fringes growing from the synovial membrane about the joint. The articular surfaces are in no way affected.

From a man 22 years old who had rheumatic affection with swelling of the joints for six years. General health was not affected. Flexion very marked, but due to fatty excresences and not to fluid, of which there was very little in the joint. Amputation followed by recovery. 1837.

DR. GEO. HAYWARD.

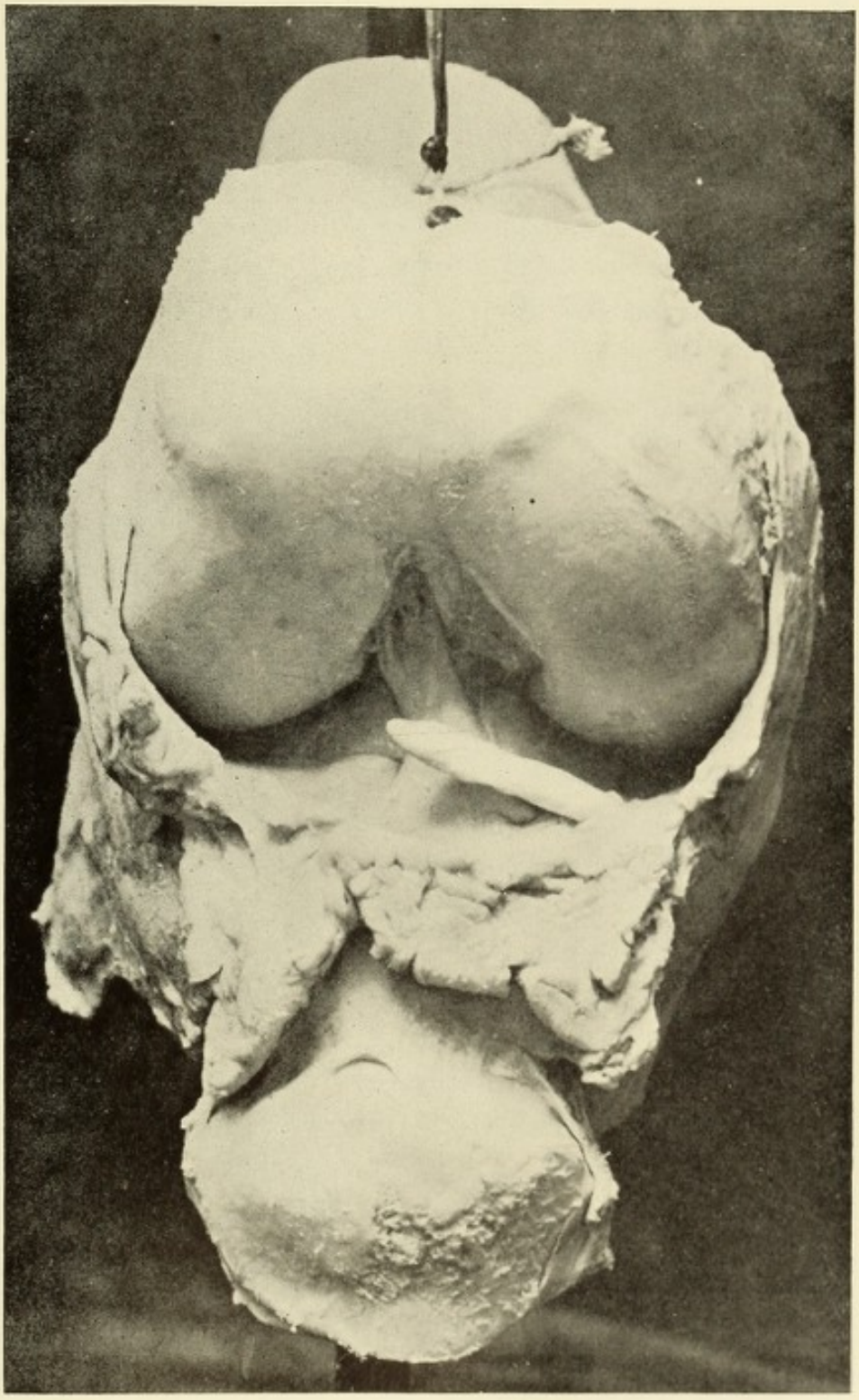


6109. Knee Joint.

10009. **Knee-Joint. Adhesions.** The bones of the knee-joint in fluid.

A fibrous band passes from the anterior part of the capsule to the cartilage between the two condyles of the femur posteriorly.

8298. Knee-Joint. Dislocated Cartilage. The bones of the knee-joint, in fluid.



8298. Knee Joint. Dislocated Cartilage.

The cavity had been opened. A portion of the internal semi-lunar cartilage is dislocated and turned forward on the anterior part as a hinge, projecting into the joint cavity. 1872. Dr. S. J. Mixter.

5314. Knee-Joint. Excresences. Pendulous excresences from the cavity of the knee-joint, in fluid.

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 dense cellular tissue with some fibrous structure.

From a woman 24 years old who 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 pain and did not arrest her suddenly when walking, as loose cartilage usually does. An incision was made over the inner condyle, the excresences removed and the patient did well.

Dr. Abel L. Peirson, Salem.

5315. Knee-Joint. Free Body.

A firm, fibrous mass about 4.5 cm. long, flattened on one side and convex on the other, surface somewhat rough and adherent to the joint by one edge.

From a woman 24 years old whose chief complaint was severe pain which would seize her suddenly when walking. The subsequent lameness would pass off in a few days. The free body was removed by operation followed by good recovery. 1836 Dr. Winslow Lewis.

5316. Knee-Joint. Free Body.

A firm fibrous mass about 4 cm. long, of flattened oval shape.

From a woman 27 years old, of generally poor health, who had had pain when walking for seven years. Operation, followed by extensive suppuration, and death on the thirty-first day. 1836. Dr. Winslow Lewis.

9881. Knee-Joint. Free Body.

A seri s of specimens illustrating the formation of free bodies found in the knee joint. One of these shows a piece of cartilage on one side about which there is a deposit of lime salts. It is supposed that they were originally chipped off from the bone and became infiltrated with lime salts. 1904.

Dr. E. A. Codman.

8188. Knee-Joint. Free Body.

A heart shaped mass about 2 cm. in diameter, composed entirely of hyaline cartilage. There was a slight infiltration of lime salts.

From a man 16 years old who, about three weeks before entrance to the hospital said he dislocated his knee which was reduced. After that he had repeated catches in his knee and effusion into the joint. Dr. C. B. Porter.

10186. Knee-Joint. Free Body.

A free body removed from the joint, of a flattened, oval shape 2.5 cm. in diameter. There is a thick layer of true cartilage covering a thinner layer of bone, the corpuscles of which are well preserved. MASS. GENERAL HOSPITAL.

8187. Knee-Joint. Free Body.

A flattened, oval mass 2.5 cm. in diameter, composed of true bone and covered on one surface with a layer of hyaline cartilage about 3 millimetres thick.

From a man 20 years old who had had a weak knee for some time. A week before entrance to the hospital he had a sharp pain in knee when getting out of bed. The limb was caught in a semi-flexed position but finally straightened. Several subsequent attacks. No fluid in the joint. 1888.

DR. J. C. WARREN.

5311. Knee-Joint. Free Body. A bony and cartilaginous mass removed from the knee-joint, dried.

This is 2.75 cm. long by 1.75 cm. wide, and 4 millimetres thick, slightly concave on one side, over which is a layer of hyaline cartilage. The opposite side is cretaceous and rough.

From a man 20 years old who fell and injured his knee. No trouble for the following six months, after which time he was subject to frequent attacks of pain and swelling of the knee. A hard, movable body about the size of a bean could be felt on the inside of the patella Twelve years after the injury the specimen was removed, followed by severe constitutional symptoms, and the man died on the tenth day. 1842. MASS. GENERAL HOSPITAL.

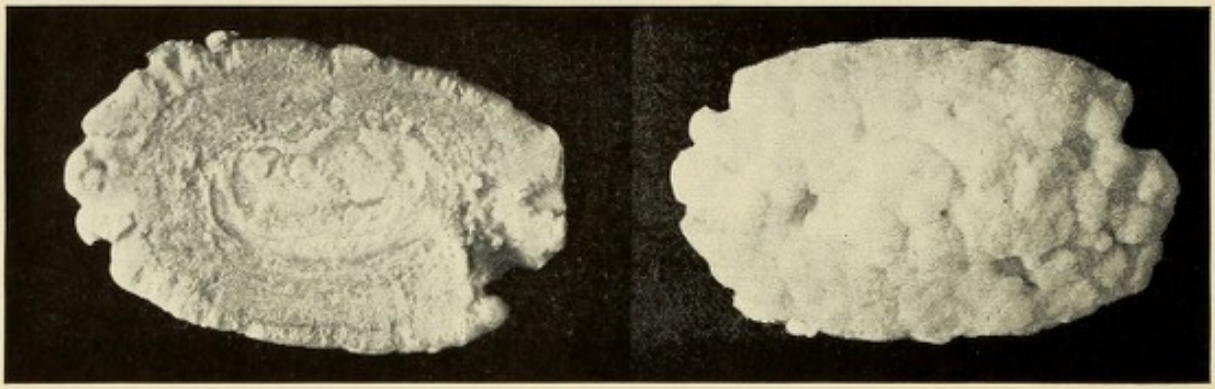
10090. Knee-Joint. Free Body. Several irregular, cartilaginous masses removed from the knee-joint of a man 60 years old. The largest is 3 cm. in diameter, in fluid.

10187. Knee-Joint. Free Body. A flattened, rounded mass about 4 cm. in greatest diameter, in fluid.

It is composed of a thick layer of cartilage over one of true bone. 1879.

MASS. GENERAL HOSPITAL.

8189. Knee-Joint. Free Body. A flattened oval mass, principally of hyaline cartilage with abundant infiltration of lime salts. The greatest diameter is about 4.2 cm., in fluid.



8189. Knee-Joint. Free Body.

From a man 50 years old who had noticed a floating body in the knee-joint for at least twenty-five years before entrance to the hospital. For the last few years he had had considerable pain with swelling of the knee obliging him to stop work. The body had increased in size the last few years.

6027. **Knee-Joint. Free Body.** Two masses composed of cartilage and bone, in about equal proportions, measuring 6 cm. in greatest length, in fluid. One was removed from each knee.

From a man 43 years old who had been troubled with his knee since he was seventeen years old. The masses were removed and a good recovery followed. 1848. DR. CHARLES H. STEADMAN.

BURSAE.

1673. **Bursa. Bursitis.** A bursa from the shoulder.

A large sac lined with a light colored serous membrane, with soft, velvety masses adherent and covering the outer surface of the bone and capsule. It contained about ten ounces of small, irregularly rounded bodies, so-called "melon-seed bodies."

From a man 30 years old who had had the disease about a year. Removal, recovery.

1674. The bodies from 1673. 1859. Dr. H. J. Bigelow.

1674. Bursa. Free Bodies.

1668. **Bursa. Cyst.** An irregular bursal cyst, or collection of small cysts, nearly 5 cm. long and 3.5 cm. wide at its free extremity, parietes thin and fibrous.

It was closely connected with the tendons and ligaments behind the knee joint, and contained synovial fluid. 1860. Dr. R. M. Hodges.

1671. **Bursa. Bursitis.** Casts to show the external appearances in "House-maid's knee."

There was a very prominent cyst over eaeh patella, which fluctuated most distinctly.

From a woman 25 years old, whose chief business was to wash floors. Disease of about two years' duration. Both cysts evacuated with a grooved needle and compression applied. The right one did perfectly well, but upon the left side there was inflammation and suppuration that extended to the thigh. Discharged well in about 6 weeks. Dr. S. D. Townsend.

4699. **Bursa. Bursitis.** Cast of a large well defined, ovoid cyst from the knee 16 cm. long. This dated from a blow over the patella ten years before. 1876. Dr. C. B. Porter.

4897. **Bursa. Bursitis.** Both prepatellar bursae, in fluid.

They are enlarged, the walls thickened, the cavity dilated and the interior roughened. Dr. D. W. Cheever.

5309. **Bursa. Bursitis.** A prepatellar bursa, in fluid.

It is enlarged to a sac 5 cm. in diameter, with a thick wall and contained serous fluid and some fibrinous masses.

From a middle aged woman. Dr. J. B. S. Jackson.

7976. **Bursa Bursitis.** A prepatellar bursa, in fluid.

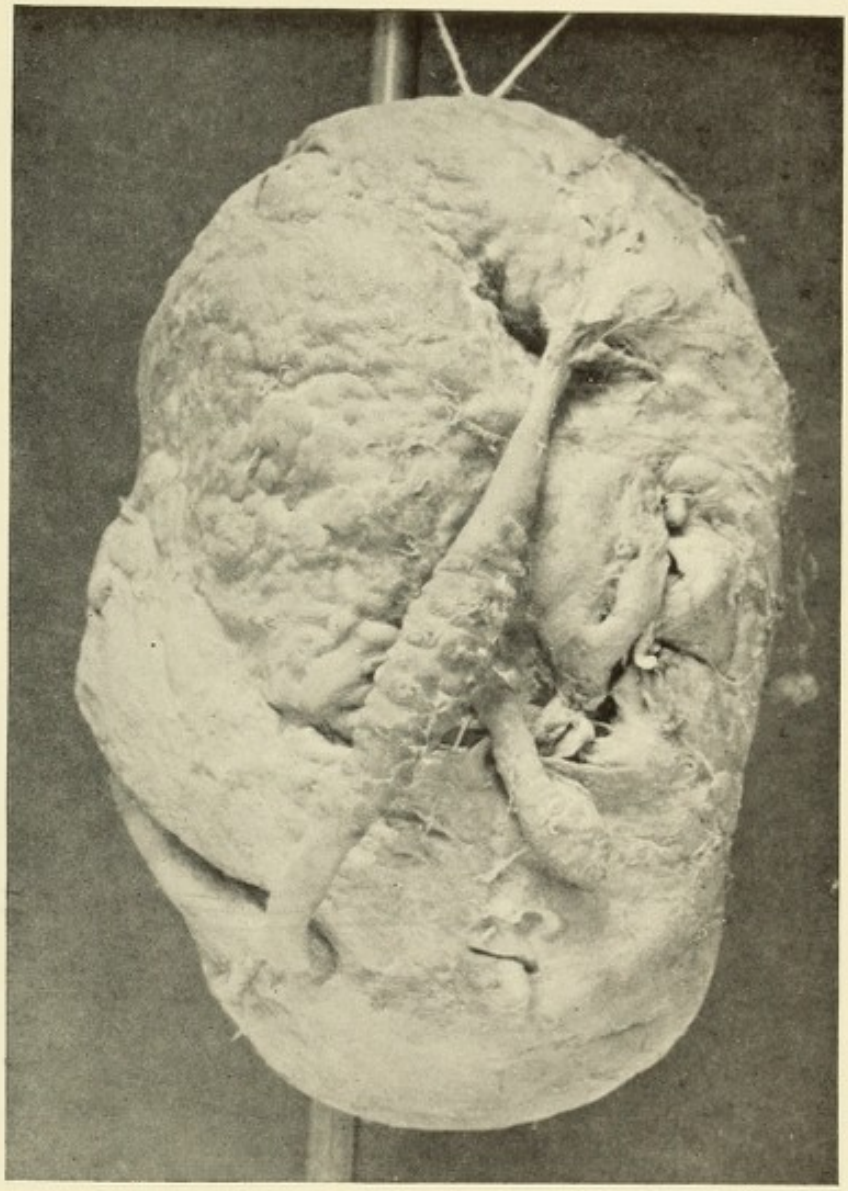
The wall is very much thickened, cavity dilated and covered with a thick, shaggy fibrinous mass. 1885. Dr. C. B. Porter.

9668. **Bursa. Bursitis.** (See page 67) A prepatellar bursa, in fluid.

It is dilated, the inner surface roughened and crossed by rounded bands. The wall is generally thickened. 1899. Mass. General Hospital.

9669. **Bursa. Bursitis.** A prepatellar bursa, in fluid.

It has thickened walls, the inner surface roughened and covered with numerous, papillary and small fungous projections. There seemed to be one or two secondary pouches. 1900. Mass. General Hospital.



9668. Bursa. Inflamed. Inner surface.

5310. **Bursa. Bursitis.** A dense, fibrous growth removed from over the patella 6 cm. long by 5 cm. wide by 3.5 cm. thick, in fluid.

Near the centre is a coarse aerolated tissue connected with the surface by a sinus. It probably originated in the prepatellat bursa.

Dr. Abel L. Peirson.

9356. **Bursa. Oeteoma.** A mass of more or less united bony tumors, measuring about 16 cm. in diameter, of an irregular horse-shoe shape, in fluid.

Removed from a bursa of the semi-membranosus muscle. 1898.

Dr. C. B. Porter.

TENDONS.

5312. **Tendon Sheath. Free Bodies.** Loose bodies from a ganglion above the wrist, in fluid.

They are white, smooth and polished, on an average about the size of apple seeds, some of a very regular, oval form, many quite irregular, the consistency about that of fibrin

The patient, 53 years old, entered the Mass. General Hospital, July 31, 1840. The disease had existed for over a year, and for the last ten months there had been swelling in the palm of the hand. On the day of admission, a free incision was made into the sac above the wrist, and about a hundred loose bodies were discharged, with a small quantity of synovia. After enlarging the opening twice, the patient was discharged, well, six weeks after entrance into the hospital. DR. S. D. TOWNSEND.

8107. **Finger. Contraction.** The left hand, which has been dissected, in fluid.

It shows marked flexure of the first and second phalanges of the fingers, due to shortening of the tendons of the flexor digitorum sublimis.

8292. **Fingers. Contraction.** Both hands, in fluid.

They have been dissected to show that the so-called Dupuytren's contraction is due to retraction of the fascia and not of the tendons.

DR. C. A. PORTER.

1629. **Hand. Muscles. Atrophy.** Cast of the left hand.

There is marked atropy of the muscles in the ball of the thumb, leaving a marked concavity in their place. 1854. MR. GEORGE G. TUCKER.