parts after their reduction, was applied, and cold water dressing enjoined. An anodyne was given. Finding, next day, when reaction became somewhat excessive, that the muscular contractions could not be controlled in this way, and that there was danger of serious displacement, adhesive plasters were applied in the usual manner, except that those by which extension was made had to be confined in their attachments to the feet alone. By means of these and the many-tailed bandage the coaptated fragments were kept in place until it was deemed safe to use the immovable dressing, which, when applied several days after, answered a very good purpose in conjunction with the plan already adopted. On the *forty-fourth day* after the accident all retentive means were permanently removed. Mr. Dutton now has full use of his ankle-joints, not even using a cane in walking.

ART. VII.—*Case of Osteoid Growth connected with the Capsular Ligament of the Right Hip-Joint.* By A. F. SAWYER, M. D., one of the Surgeons of the "Hospital of the Sisters of Mercy," San Francisco, Cal. (With three wood-cuts.)

THE patient, a native of France, æt. 47 years, entered the hospital for treatment, March 16, 1857. He has a full adipose habit, with the general appearance of sound health.

His own account of the case is as follows:—

About a year ago his attention was directed to the presence of a small apparently movable tumour, on the anterior surface of the thigh in its upper third. At first it did not seem to increase in size, and gave him very little inconvenience. During the last six months, it has been rapidly enlarging, especially towards the ilium, attended with sharp pricking pains, exaggerated at night, more particularly after a hard day's labor. He has continued his occupation as a miner, until within a few weeks, when, becoming apprehensive as to the real nature of the disease, he for the first time solicited medical advice. He could give no rational cause for the origin of the tumour. His parents were healthy and long-lived; and although his previous history has been one of great exposure physically, he has never suffered much from general sickness. The only circumstance narrated, which can have had even an indirect bearing on his case, is in connection with an accident he met with about two years previously to the development of the tumour, at which time he received severe injuries in the back from a mass of earth falling upon him. He was not, however, so severely disabled that he could not rescue himself unaided, and afterwards walked some distance to his cabin. Something like six weeks elapsed before he could resume his usual employment, suffering more especially from severe pains in the lumbar region, attended with some swelling of the soft parts, and general sympathetic fever. No pain was felt about the pelvis. There was no lesion of its contained viscera, and he preserved an entire command over the motions of the lower extremities, without any symptoms whatsoever involving the ilio-femoral articulation. Within the last four months a lameness has gradually supervened, and latterly he has required a cane to assist him in locomotion.

On examination, there was found on the upper and anterior portion of the right thigh a large tumour extending from near the anterior-superior spine of the ilium downwards nine inches, in the direction of the long axis of the femur. Above, the tumour was widely expanded, apparently placed against the ilium, and covered in by the muscles of this region. Inferiorly, the tumour became gradually tapering, and its well-marked *bifurcated* extremity could be felt quite superficially beneath the skin. It had a hard cartilaginous consistency, and appeared to be movable, as was certainly the case in the lower and superficial portion of it. The integument was somewhat stretched over the tumour, but not discoloured. There seemed to be but little tenderness, and even with rough manipulation no complaint of additional pain. The pain, as described, was always of a pricking character, and confined to the tumour itself.

The right lower extremity was shortened five-eighths of an inch, when his body was in repose, yet the limb could be drawn down to correspond with its fellow. On rotation of the thigh, and in flexing and extending it upon the pelvis, a most extraordinary freedom of motion was found in the hip articulation, attended with extensive grating and crepitus, which could be heard some distance from the bedside. By forcible abduction and adduction of the limb, the head of the femur traversed the acetabulum abruptly, and with loud crepitus. There was certainly an unnatural laxity of the capsular ligament, perhaps rupture of the round ligament, and the grating indicated that the articulating surfaces of the joint were deprived of their natural cartilaginous coverings. The patient voluntarily, and without pain, could move his thigh in every direction; flexing it, rotating it, etc., yet always with the same grating sounds. These movements of the head of the femur, jumping about as it were in the acetabulum, were, to say the least, very peculiar. The patient does not at present, nor has he ever suffered the slightest pain in the articulation, either in walking, or even when the head of the femur is driven forcibly against the acetabulum. All the pain experienced, whether in a reclining or upright posture, is referred directly to the tumour, and becomes somewhat aggravated after over-exercise of the limb. He could bear the weight of his body on the affected limb, and walk about with tolerable ease without any support. The lameness in walking appeared to result rather from the shortening of the limb than from any loss of direct power over its movements.

He made no complaint of his general health, had a good appetite, and appeared strong and vigorous. Some general febrile symptoms were complained of, as thirst, dryness of skin, and constipation of the bowels. This condition of the system he reported as paroxysmal, although not preceded by chills, a remark of some importance, as the patient, during his residence in the mines, had often suffered from light attacks of fever and ague. Pulse 78, full and strong.

In our investigation of this case we could not make a decided diagnosis, and we shall now briefly consider the points of certainty or uncertainty connected with it.

The general appearance of the tumour, its position, solidity of texture, and particularly its bifurcated end, which was obvious to the eye as well as to the touch, where it protruded through the muscle beneath the integument, reasonably led to the idea of an exostosis, which had its origin from the upper part of the femur or some portion of the pelvis in the neighbourhood of the

acetabulum, an examination of the bulk of the tumour indicating deep-seated attachments. These positive features of the case strongly demanding the diagnosis of solid bony growth, having its origin in bone, were negatived by the single fact of mobility, which, if not fully distinct in the mass of the tumour, was unquestionably so in the superficial, and from the singularity of its formation, in this connection, its most important part, since it could be readily grasped by the hand, and exhibited motion quite distinct from flexibility.

The consistency of the tumour was too great for simple sarcomatous, adipose or cystic growths; and for the same reason it was necessary to reject the probability of any purulent deposit, although the position might be an appropriate one for abscess connected with caries of the spine, especially in a case where, from the previous injuries which the back had received, we might have suspected the results of inflammatory action kindled up in the bodies of the lumbar vertebræ. The bifurcated end of the tumour forbids the idea of aneurism. Apart from this circumstance, it bore many points of resemblance in position and outline to a case of aneurism of a branch of the "*profunda femoris*" that recently fell under our observation, which was entirely without bruit or pulsation, and the true nature of which was only disclosed by an explorative puncture into it. And lastly, could it be considered a case of malignant disease of a fibroid nature in its primary stage of development, and without presenting as yet the well-marked local and constitutional signs which may make a diagnosis certain? It is to be remembered that excessive pain and tenderness are not always necessary concomitants of malignant disease. One of the most extensive cases of osteo-sarcoma of the tibia that we have ever seen was attended with only trifling uneasiness, never sufficient to prevent rest. In this case there was no tenderness, but the nature of the pain was suspicious, a constant pricking pain. Added to this was the general character of the growth itself, and the inguinal glands were decidedly enlarged.

With an opinion inclining in this direction as to the real nature of the tumour, the hip-joint now becomes an interesting study, as its extensive anatomical lesions indicated a more or less intimate relationship with the tumour, especially as the unnatural condition of the articulation began to develop itself at a period subsequent to the appearance of the tumour.

We have already mentioned its leading peculiarities as an unnatural mobility of the joint, associated with a decidedly bony crepitus, and a very considerable shortening of the limb. A fair inference would be that the joint had suffered at some time previously from direct violence applied to it, causing perhaps fractures of the neck of the femur or of the acetabulum, complicated with a tearing of the fibrous textures of the joint and with more or less displacement of the bony fragments. Is it possible that from the activity of the inflammatory processes thus kindled up a nidus could have been formed for the development of the tumour? Such extensive lesions, had they occurred, would probably have been within the knowledge of the patient. So far from

this being the case, the patient noted these changes only after the tumour had excited his attention, and they became steadily progressive as the tumour enlarged, and in his narration of the injuries really received there is nothing that implicates the integrity of the hip-joint. Again, it was scarcely possible that caries could have existed from constitutional or external causes; for there had never been pain, swelling or tenderness about the joint, and he had always preserved the most entire voluntary control over the limb; such pain as was complained of being referred to the body of the tumour. The tumour could not be regarded as an abscess connected with such caries, granting its existence, for the reasons detailed when speaking of lumbar abscess.

If his statements were to have any value in a review of his case, we were rather disposed to regard this unnatural condition as resulting from the irritation occasioned by the attachment of the morbid mass to the joint itself, or in its immediate neighborhood, and thus leading to a progressive absorption of the bone and cartilage which enters into its formation. At all events, from some cause or other, the acetabulum had suffered severely, and it is only by granting these extensive changes that the extraordinary freedom of motion and grating of bone in the joint could be accounted for.

The peculiarities of this case attracted considerable attention from the profession in this city, and we are not aware that any unlimited diagnosis was ventured concerning it. It was generally considered to hold an anomalous position in the class of affections the surgeon is called upon to treat.

Operation.—*March 21.* Having determined to extirpate the tumour, and having previously stated to the patient the dangers to be apprehended from an operation, which I conceived if the disease was of a malignant nature might end in an exarticulation of the limb, and to the performance of which he gave his entire consent, he was placed under the influence of sulphuric ether. The thigh being placed in a position to relax the muscles, a longitudinal incision was made downward through the integument from a little above the anterior superior spine of the ilium, to the lower third of the thigh. Just above the insertion of the tensor vaginae femoris a second incision was made intersecting the former at right angles, and the flaps of skin then lifted up so as to expose freely the inferior portion of the tumour. It was found to consist of a fibrous and cartilaginous texture, with an extensive deposit of bone within it, which appeared to be articulated with the more deeply seated portion. Superiorly, the tumour presented in the interval between the tensor of the fascia and the m. sartorius, its base being packed as it were against the crest of the ilium. The bulk of the tumour was located in the m. rectus, and muscular fibres radiated from all portions of it. After enucleating the tumour by dissection in order to reach its attachment, it was necessary to divide partially the tendons of all these muscles. The anterior portion of the capsular ligament was found completely involved in the diseased mass, and a pedunculated bony connection existed at the margin of the acetabulum, external to the short head of the m. rectus, and which was separated with some difficulty. The cavity

of the joint presented a remarkable condition. The acetabulum was very much enlarged, and rather flattened by the absorption of old and the deposit of new bone. The round ligament had disappeared. The head of the femur was rough and flattened, and not a trace remained of the articulating cartilages. On dividing the bony attachment above referred to there was an escape of what appeared to be synovial fluid, perhaps 3ss in amount, and of a healthy appearance; but not a trace of synovial fluid or pus existed in the cavity of the joint. From its pathological condition we might justly have expected an abundance of the latter; but the opposite character rather existed—a peculiar *dryness* of the articulation which we are at a loss to account for.

There was not much hemorrhage during the dissection. Two large branches of the profunda femoris directly supplying the tumour required ligature; otherwise a few superficial vessels only.

Doubts still existing as to the malignancy of the tumour, and as the wound, although severe, appeared clean, with no traces of the tumour remaining, and as it was thought, notwithstanding the cavity of the joint had necessarily been opened into, that its altered relations would protect it from the severe results usually to be apprehended from wounds of healthy articulations, it was deemed expedient, on consultation, to attempt to preserve the limb. The edges of the wound were brought together with sutures, cold-water dressings applied, and stimulants allowed according to the will of the patient.

Dissection of the Tumour.—The tumour was seven inches in length, of a lobulated form, gradually tapering towards a slender bifurcated extremity; its surface was very irregular, and marked with the attachment of muscular fibre, which soon became lost in the cartilaginous matrix of the tumour. There were also radiating patches of condensed fibrous substance stretching out into the surrounding muscle. There was no cyst-wall or a semblance of the partially distinct envelop formed of the hypertrophied areolar tissue often observed partly or entirely surrounding fibroplastic tumours. It was composed of distinct masses of bone connected with each other and surrounded by condensed tissue like fibro-cartilage. They appeared to result from special centres of ossification, which would have eventually coalesced into a solid tumour.

Fig. 1.

As it was, the union being incomplete between the separate pieces permitted a latitude of motion in them to such an extent as to convey the idea of a movable tumour in the examination previous to the dissection. The largest of the fragments was five inches in length by two in breadth, somewhat resembling a long bone in appearance, with an extremely dense exterior, and with its central medullary cavity, although very irregularly developed. The smaller pieces could be easily cut with a knife and had more the appearance of the cancellated texture of bone. The fibrous matrix in which they were formed was quite firm in texture, and distributed through it were numerous cells varying from the size of a bean downward, containing a peculiar curdy substance of a yellowish colour. These cells were also quite abundant in the parts ossified, and had firm walls of a fibrous character. Bands of white lustrous fibre traversed the smaller ossified pieces without preserving any uniform direction. The portion of the tumour covering in the hip-joint had a rough villous surface; no trace of the synovial membrane could be found. The tumour was very vascular, the more solid parts being highly injected with bloodvessels resembling bone in an inflamed state.

The microscopical appearances of the tumour are worth noting. Its matrix was composed for the most part of condensed filamentous tissue. The wavy fibres of a pearly lustre were clearly brought out in any section of what appeared to constitute the cartilaginous portion of the growth. The indurated nodules cropping out from the surface of the growth and imbedded in the

surrounding muscle, evidently nuclei for the additional deposit of bone as the tumour increased in size, were purely made up of this texture. Interspersed among the meshes of the filaments was found an amorphous granular matter, an abundance of oil globules, and cells containing nuclei and nucleoli such as are represented in Fig. 2. The ossified portions had the structure of true bone. The corpuscles of Purkinje with the radiating canaliculi were beautifully distinct. An abundance of nutritive canals (corresponding to the canals of Haver) were

Fig. 2.

observed, although irregularly distributed and soon lost in the surrounding fibrous tissue.

The cysts previously described, found in the bone and the less solid parts of the tumour, contained an abundance of oil globules, granular matter, and the cell growth as seen in the accompanying drawing.

As the result of our observations in this case we suspect that the areolar or filamentous texture is really that which in its modifications from a healthy condition, growing out of obscure, perhaps impenetrable causes, gives origin and material of progress, more frequently than is ordinarily supposed, to a large class

of factitious growths which are engrafted on the human body. One of the most rudimentary forms of abnormal ossific structure is found in the subserous filamentous texture of arteries, where we have under the microscope simply an amorphous granular deposit. There is still a tendency towards a structure exhibited here, as the plates are arranged with a tolerably uniform thickness, preserving the calibre of the vessel. The modelling process by which this is accomplished belongs to the subserous tissue, and at all events shows an effort at arrangement not apparent in the masses of granular calcareous particles, loosely connected by fibrin, much resembling a precipitate from the blood, as we have seen in one instance, nearly obliterating the cavity of the aorta, the walls of which were almost completely transformed into a bony tube. In this case the ossific plates were found very numerous distributed in the coats of the larger veins.

That the filamentous tissue may possibly form the nidus for the extension of morbid growths, when their nutrition becomes active, derives some support from the wide-spread anatomical relations of this texture to the organic fabric.

The curious attachment of muscular fibre to the surface of these tumours is thus easily accounted for. As the tumour grows, the sheaths of successive fasciuli being gradually incorporated with it, making for them new and independent attachments, we believe the muscular fibre to be gradually lost by the absorption of its elements, and not transformed into the proper texture of the tumour. In the case of osteo-sarcoma of the tibia, already cited, the principal mass of the disease posteriorly corresponded directly in outline with the *m. popliteus*, a few shreds of this muscle only remaining superficially.

The various forms of abnormal structure of which the etiology is so little understood, may well be regarded as the genuine parasites of the human body, corresponding approximatively to the fungi of the vegetable world. All pathologists agree in considering them as textures of a low vital type, and were it reasonable to draw conclusions from a single case, we should assert that the more primitive structures in the animal body afforded the most natural habitat for their development, as the lowest forms of vegetation, to pursue our analogy, connect themselves with the least vitalized portion, as the bark of the higher orders of plants.

These reflections are simply suggestive, to provoke inquiry, rather than to intrude on the profession dogmatical statements.

In the evening after the operation, reaction was well established, and the patient made no complaint. Pulse 100, full and soft. Opiates were allowed to promote rest.

22*d.* The patient rested tolerably well during the night. The tongue continued moist, although there was some thirst. Pulse 110. Some pain in the wound, not severe enough to occasion distress, with slight tumefaction.

Strongly nutritive drinks allowed; anodynes continued, with moderate use of stimulants.

23*d.* Reported himself as more comfortable. Slept well during the last half of the night. The bowels have not been moved since the operation. Pulse

116, rather sharp. The thigh is somewhat swollen; the margins of the wound reddened, with a considerable discharge of sanies.

A full nutritive diet ordered. Castor oil to act on the bowels.

24th. Irritative fever, with marked constitutional prostration. Two dejections from midday of yesterday. Sharp pains complained of through the lower portion of the abdomen. Wound as previously described. Pulse 127, sharp.

Stimulants and opiates continued, with warm fomentations over the abdomen, and a light yeast poultice to envelop the thigh.

7 P. M. The patient was suffering the most agonizing pains, with a sense of tightness and constriction through the lower portion of the abdomen. No additional tumefaction or irritability about the wound. Discharge scanty, of a sero-purulent character. A greenish discoloration over the m. glutei observed stretching across the lumbar region of the back. The pulse can scarcely be counted.

25th. Well-marked gangrene established in the parts mentioned in the previous report. The patient finally sank after extreme exhaustion.

Autopsy 12 hours after death.—Slight cadaveric rigidity. The discoloration of the integument was confined to the lower hack and buttocks, without any tendency to a line of demarcation, and not involving either the wound or the thigh. The muscular textures were generally much softened, including the muscles of the thigh, otherwise but little change had taken place in the track of the wound. About 3ij of sanious pus, without marked fetor, was found in the cavity of the joint. No traces of excited action existed in the joint itself, or textures immediately adjoining. No traces of inflammation of either the veins or arteries could be discovered. Viscera of the chest and abdomen perfectly healthy.

We have added a drawing of the pelvis and head of the femur, showing the condition of the bone entering into the hip articulation (see Fig. 3). The gross

Fig. 3.

appearances will immediately strike one as similar to the changes often observed in coxalgia, and were accomplished by the progressive absorption of old bone and the deposit of new ossific material. There were no evidences of caries or necrosis. Absorption was more active than the reparative process, as the new deposits seen about the margin of the acetabulum and the head of the femur were of a light porous character, it being possible to compress many of the little nodules between the thumb and forefinger. External to the acetabulum, although the form of the pelvis had been preserved, the bone had become so thinned and porous by absorption, as to admit rays of light to readily pass through the minute intervals from one surface to the other. The neck of the femur appears, at first sight, shortened. On comparison with its fellow this was found not to be the case. The head of the femur was flattened and fissured, its margins irregular and expanded by the deposition of new material.

The cause of gangrene in this case was a little obscure. It will be observed that it did not display itself in the parts where we should have more naturally expected, either in the wound itself or the thigh, but in the back and gluteal region. It could not have resulted from loss of blood, for the hemorrhage during the operation was trifling, the two large branches of the profunda being ligated as soon as divided.

It is more probable that death resulted from the prostration of the nervous centres connected with the operation, although this is difficult to concede, for the patient was remarkably comfortable, considering the severity of the case, up to the day preceding his death.

ART. VIII.—*Cupping the Interior of the Uterus.* By HORATIO R. STORER, M.D. (Read before the Boston Society for Medical Observation, Oct. 19, 1857.)

CASE I.—Catharine —, of Roxbury, aged thirty, and unmarried, applied for treatment at the Eustis Street Dispensary, February 2, 1857.

Catamenia reported as entirely absent for seventeen years; having commenced at twelve, continued regular for one year, and then on her taking cold, permanently ceased. A general leprous eruption, which immediately followed this suppression, has been constantly present since, disfiguring the patient and otherwise causing her much discomfort.

Somewhat dyspeptic and anæmic; costiveness; addicted to headache, flatulence, nausea. Old ulceration of tonsils. Vaginal leucorrhœa.

She was at first mainly treated for the disease of the skin. The diet was carefully regulated and the bowels kept moderately open. Iodide of sulphur was used locally, Fowler's solution by mouth till specific effect; in vain.

The protoiodide of mercury was then given, though all syphilitic taint had been denied. It was pushed till great irritability of the bowels was produced, though it had been combined with an opiate; patient not improved. The