As emphasizing the great distention which occurs in the gut in cases of cancer, Dr. Hewson mentioned a case which came to the Oncologic Hospital after having been operated on elsewhere. Through the operation wound in the left groin a soft rubber catheter could be passed to a point between the median line and the opposite groin.

CHEWING GUM REMOVED FROM THE BLADDER.

Dr. E. H. Siter showed this specimen, which had been in the bladder four days. It was remarkable chiefly for the large amount of salts adherent to it. The gum had been inserted in the penis to prevent nocturnal emissions.

Dr. William J. Taylor recalled the fact that he reported to the Academy last year an instance of gum in the bladder, it having been inserted in the penis to stop a gonorrheal discharge. This had become encrusted with salts and formed a large stone. Perineal section failed to allow removal of the mass, which was finally secured through a suprapubic opening.

STATED MEETING, DECEMBER 4, 1905.

The President, Henry R. Wharton, M.D., in the Chair.

THE OPERATIVE RESULTS IN AN OLD FRACTURE OF THE PATELLA.

Dr. Edward Martin presented a man who in May, 1905, had by a direct fall upon the patella fractured that bone, the fracture probably being comminuted. Two months later he came to the hospital with his knee-joint absolutely stiff and very painful, the patella being firmly fixed by adhesion to the anterior surface of the lower articulating end of the femur, and also to the skin. Operation was performed in the usual way by turning a broad flap from above downward. The upper fragment was firmly adherent to the femur by tissue that was almost bony in character. After the removal of several small splinters, the bone and capsule were sutured in the ordinary manner, the patella with silver wire passed through drill-holes. The patient did well and at the end of three weeks went home with a freely movable patella and a painless smooth flexion of 45°. A few weeks ago he returned because motion in the knee was not sufficient to allow him to go upstairs readily or to stoop, positions required in his work. Examination showed that the joint appeared to lock and on forced flexion pain was felt on the outer side of the articulation. The patella was firmly united by bony union. Reopening the joint was considered, but under moderate anæsthesia flexion was carried to beyond a right angle. Two days later the joint was again bent, under ether, and the patella refractured. Dr. Martin now intends to allow the man to go home with a slight separation of the fragments (maximum in flexion ¼ in.) as this may give him a more useful knee; he has been allowed to walk about since the fracture. The case illustrates that it is not necessary to transplant a soft flap between a patella which has grown to the femur and the surface of the latter bone after loosening their adhesion as the

same result can be secured by passive movement of the bone. It also suggests that some of the good results reported from the use of such flaps may have been due to passive motion after operation. He also believed that a longer period of delay after operation before forcibly breaking up adhesions would have been desirable.

EXTENSIVE ANGIOMA OF THE FACE.

Dr. Martin presented a boy of 12, who had been under treatment for eleven months. The angioma, which was noticed the second day after birth, involves the entire upper lip and extends well toward the left eye. It is adherent to the skin, the vessels of which are also affected, and extends into the mouth as far as the soft palate. Plastic operation seems out of the question, as any radical surgical proceeding could not help leaving an enormous scar and excessive disfigurement. Galvano-puncture was employed every second or third day for several weeks, the needle being inserted about the periphery of the mass but from this no distinct benefit was derived. The injection of absolute alcohol, 20 minims once a week, was then begun and has been carried out for some months. This procedure is followed by inflammation and contracture and is undoubtedly causing improvement. Dr. Martin is now contemplating the use of subcutaneous ligature or of causing a greater degree of inflammation by inserting sterilized catgut. The latter may be accomplished by passing a large hollow needle through the plexus of veins, having a piece of catgut through the lumen of the needle; withdrawing the needle, leaving the catgut in its place, and cutting both ends of the gut close to the skin. This should encourage the formation and subsequent organization of an extensive exudate.

Dr. John B. Roberts mentioned a case of angioma of the lip, in a child of three, recently under the care of Dr. J. P. Hutchinson at the Methodist Hospital. A good deal was gained in that case by subcutaneous ligature; and now Dr. Roberts is injecting with success boiling water after the manner of Wyeth. A year ago he operated on an infant with a large angioma of the brow which had been subjected to almost all the disfiguring operations resorted to in these cases, without permanent benefit. It was cured by the use of Wyeth's method. There seemed to be but

little irritation caused by the injection, though five or six punctures were made at each sitting. The method is a very valuable one.

Dr. Richard H. Harte spoke of a case which some years ago was under the care of Dr. Hodge in the Presbyterian Hospital. It was similar to the case shown by Dr. Martin, except the growth did not extend so far toward the nares. Dr. Hodge succeeded in applying a ligature and this was followed by satisfactory results. Regarding the Wyeth method of using hot water, Dr. Harte had one case of angioma involving the hand and forearm in which he employed the injections extensively. His experience is that a great deal of care and caution must be exercised in its use. In many cases if water be used indiscriminately, disastrous results will follow. In angiomas injection does cause an inflammatory thickening and the mass shrivels and disappears. Dr. Harte finds that a great deal of reaction follows the injections; at one time he was quite alarmed by the after symptoms in his case.

URINARY INFILTRATION; ACUTE SEPSIS; RECOVERY AFTER PERINEAL SECTION.

Dr. De Forest Willard reported the history of a mulatto, 24 years of age, who was admitted to the Presbyterian Hospital December 1, 1905, with a temperature of 104.2. He gave a history of gonorrhea six years previously with intervals of urethral discharge since that time. He had had no previous retention of urine, no ardor urinæ, except occasionally when the stream would be interfered with. An advertising doctor whom he visited in New York (according to his account) divided his meatus and apparently did an internal urethrotomy with an intensely infected instrument. He returned to Philadelphia the same evening and drove about the city as coachman the following day, bleeding somewhat from the urethra. In the evening he had a considerable hemorrhage. On admission he was bleeding slowly from the urethra and the following day there was so much oozing that no instrument was passed. His perineum was bulging but was not hard, but was moderately tender. The following night he had two chills, after which his temperature rose to 108.4; pulse 176. The temperature was taken by the mouth by a careful nurse, and was verified a half hour later by the head

nurse, when it was still 107.8; leucocytes 17,000 to 24,000; urine, blood tinged; bowels moved involuntarily in bed. Abundant staphylococci only in blood.

Dr. Hodge then made a median perineal section. An English catheter was inserted into the bladder and on a grooved director the urethra was split back to the prostate only. The catheter was left in the bladder and connected by a tube to a urinal. The hemorrhage was considerable but was controlled by packing. No pus was found, but the oozing of the septic products and toxins was free and the effect upon the temperature and pulse was speedily evident and improvement was rapid. He was discharged from the hospital in twenty days with an opening still in the perineum. Steel sounds to be passed at regular intervals to insure the formation of the proper sized urethra.

A peculiar part of the history is the insistence by the patient that the operation from which he so narrowly escaped death was performed, not for stricture, but for the cure of seminal emissions.

The reporter said that he had never before, save in sunstroke, had a recovery when the temperature reached 108.4.

Dr. William J. Taylor said the man operated upon by Dr. Willard was in his employ. The urethrotomy was done on Tuesday afternoon and the man came to his work on Wednesday morning apparently perfectly well. He drove until 2 o'clock but was taken with a chill and fever in the afternoon. In the evening he became ill and was seen by Dr. Steele, who lived near his home, and sent to the hospital. Now a 28 French sound can be passed. The perineal wound is not yet skinned over but the man seems perfectly well and attends to his driving as usual.

BRADYCARDIA FOLLOWING HEAD INJURY.

Dr. De Forest Willard reported the history of a man, 64 years of age, who was in good health until ten days previous to observation, when he had an attack of vertigo lasting but a few minutes, with no spasmodic symptoms. He was admitted to the Presbyterian Hospital November 21, 1905, with a slight scalp wound in the back of the head, reported to have been occasioned either by a brick having fallen upon him, or as believed by a fellow workman to have been occasioned by vertigo which had caused him to fall about four feet. Patient walked to the hospital, but while being dressed had a slight convulsion in which the face

became cyanotic and was followed by snoring sleep of several hours but from which he could be easily aroused. Was dazed and slightly delirious for several days. There were no evidences of fracture; no paralysis; pupils slightly unequal for two days, afterward of same size. He lay most of the time with his eyes closed, quietly sleeping, but could be easily aroused and answered questions intelligently.

On entrance his pulse was 56, but fell steadily without diminution in volume until on the second day it reached 28; the fourth day 25; the seventh day 23; has continued in the twenties up to the present time—*i.e.*, ten days. Respirations varying from 12 to 20; temperature 97. His arteries are very atheromatous, but he presents no evidence of valvular disease of the heart, although the muscle is weak. Heart sounds agree with pulse at wrist. Urine from 30 to 90 ounces daily. At first slight trace of albumen with a few casts; later, negative. Leucocytes 8000; hemoglobin 98 per cent.; red blood corpuscles 4,900,000.

The cause of this inhibition of heart action is difficult to explain and the point of interference with the pneumogastric or sympathetic is uncertain. He eats and sleeps well and appears to suffer no special inconvenience. Has no loss of motor or sensory power. As he had not been attended by any physician it is not known whether he had ever shown this slow pulse on previous occasions. Dr. Willard had never, save in opium poisoning, seen so low a continuous pulse.

ASEPTIC FOREIGN BODY LEFT WITHIN THE CRANIAL CAVITY.

Dr. John B. Roberts reported the following case because of the unusual position in which a piece of sterile gauze was left after operation for trephining the skull.

A man was admitted to the Methodist Hospital on November 7, 1905, with a sinus above the right ear which was discharging a small amount of pus. He complained of severe headache, in the same region, and general convulsions accompanied by unconsciousness.

The history which he gave was to the effect that on July 1, 1905, he fell from the third story of a building, sustaining an injury to the head, for which he was subjected, in a hospital, to operation upon the skull. He was discharged cured in a month

and returned to work. At this time he felt fairly well, although he complained of mild headache, progressive loss of hearing in the left ear and diminution of sight in the right eye. Two and a half months after the time of the original injury, he was struck upon the head in the region of the scar and promptly thereafter suffered an increase in the severity of the headache. In the course of a few days there was a discharge of a considerable amount of pus from a swelling at the region affected. The discharge of pus continued through the sinus left and was present when he came to the hospital for treatment. A week before his admission he had sharp pain at the site of the old scar, clinching of the hands and jaws and unconsciousness.

Examination upon admission showed a semilunar scar over the right ear and a sinus near the ear at the end of the former incision. There appeared also to be a slight discharge from the ear itself. The heart, lungs, liver and spleen showed on examination nothing abnormal. The reflexes were normal and the sensation unimpaired. Careful examination of the eyes and ears was not made at the time, because the patient's convulsions became so marked that Dr. Roberts proceeded to operation a day or two after his admission. The pain in the head and the convulsions were so severe, and the latter so frequent, that it seemed important to open up the sinus and search for a brain abscess rather than wait for extended study of the case. The region affected was incised and developed evidence of a former trephining, and a sinus running into the cranial cavity. The opening, which was in the squamous portion of the temporal bone, was closed with thick fibrous tissue. A few drops of pus exuded from the fistulous tract, but no abscess cavity was found. There came to view, however, underneath the dura at the upper part of the trephine opening a piece of gauze, such as is used for packing wounds, firmly attached to, and interlaced with, the fibrous tissue. In order to withdraw this foreign body, it was necessary to cut out the mass of fibrous tissue which closed the opening in the skull and then cut away a portion of the bone at the upper edge of the opening. The original opening had been about 1½ inches in diameter anteroposteriorly and three-quarters of an inch vertically. Careful exploration was made to see that no portions of gauze were left.

The wound was thoroughly cleansed and closed partially,

but in a manner not to interfere with drainage. The dura, of course, could not be closed and it was necessary to provide drainage, because of the existence of pus before the operation was begun.

The plug of gauze removed was about the size of a hazelnut. It seems probable that at the time of the original operation, done by a surgeon in some other hospital, bleeding occurred and a piece of gauze was used to make pressure upon the divided vessel. It is evident that the operation was done with such aseptic care that prompt union without septic inflammation occurred. Whether the abscess, which subsequently occurred, was caused by the blow upon the side of the head received two months and a-half after the original injury, it is impossible to determine. From the short time after this injury that the abscess opened spontaneously, one would be led to believe that a chronic abscess had already formed before the blow upon the side of the head called the patient's attention to the matter.

Since the time that the gauze was removed, which is now about five weeks, the patient has had no special difficulty with the wound, except that he complains at times of pain in the head, and there is a protrusion of brain substance at the opening in the skull. This protrusion was to be expected, because there was neither dural covering nor bone over the brain at the site of operation. It was impossible, and it would have been unwise, to cover in the opening in the calvarium.

The man has been irritable during convalescence and occasionally has violent convulsive seizures, clonic in type, accompanied with opisthotonos and pain in his head. The wound is in good condition; and pulse, respiration and temperature are practically normal. He is liable to get convulsive attacks and become excited, if he is kept in a ward with other patients or in a place where there is noise and confusion from people passing to and fro. When he has mild convulsions, which occasionally take place, the seizures are focal in type; the muscles of the neck pull his head to the right with the chin upward very much as if the spasm were in the left sternomastoid muscle; the head and eyes are deviated to the left without twitching of the face and eyes. At such times there is no involvement of arms, feet or legs in the convulsion. Recently he has been more apt to have the severe convulsions than the milder ones. In these there are clonic

spasms of the extremities, with opisthotonos and violent shouting. The man is conscious and rational, except at the time of his convulsion. The convulsions, when severe, are described by the resident physician, Dr. Hall, as follows:—"The arms are sometimes extended, sometimes flexed, and shake with a fine tremor, being held quite rigid. The lower jaw is moved slightly up and down; the chin is rotated to the right and slightly elevated as if by action of the left sternomastoid. The eyes roll upward, sometimes looking directly upward, more often being deviated to the left. They are held immobile. In addition, the patient sometimes raises his hips up from the bed and rolls and threshes about, but the movements are in no definite order. They are such as any patient would show when suffering intense pain. After the convulsion is over the patient frequently complains of intense pain in his head and points to the right anteroparietal region." For a time these convulsions were very frequent and severe. Some of them are accompanied by vomiting, which occurred after the convulsion was over.

Large amounts of bromide potassium, some chloral, and hyoscine and codein have been used to quiet him. Occasionally it was necessary to confine him with straps or bandages. Chloroform has sometimes been given by inhalation to stop the convulsion.

The eyegrounds are apparently normal. There is no discharge from the ear. There are some casts in the urine. On account of the result of the recent urinary examinations, he has been given Basham's mixture as a diuretic.

The convulsions have seemed to be of a type which might, perhaps, be described as hystero-epileptiform.

THE EFFECT UPON GLANDULAR TISSUE OF EXPOSURE TO THE X-RAYS.

BY WILLIAM J. TAYLOR, M.D.,
OF PHILADELPHIA,
Attending Surgeon to St. Agnes Hospital and to the Orthopædic Hospital; Consulting Surgeon to the West Philadelphia Hospital for Women.

THE beneficial effects of the X-rays are so enthusiastically proclaimed by the advocates of its therapeutic use in granular swellings and certain of the new growths, that I think a few of its disadvantages should be spoken of by those who see the after effects and who are forced to operate upon tissues that have been long under its influence. My own personal experience is such as to lead me to advise against the employment of the X-rays wherever there is a probability of the case coming to a formal surgical operation. On account of the alteration in appearance and character of the tissues where its use has been prolonged, operations which would ordinarily be simple and easy dissections become formidable and dangerous, as the tissues are thickened and matted together by fibrous material.

This change in the character, both of the surface skin and underlying tissue, is particularly well marked in cases of enlarged cervical glands,—the so-called tubercular adenitis. Ordinarily operations for this condition are easy to perform, the glands readily peel out by blunt dissection, and the blood-vessels and nerves retain their distinct characteristics, thus being plainly recognized and preserved from injury. The physical characteristics of the tissues of the necks which have been subjected to treatment by the X-rays are, however, markedly changed in appearance; the glands become hardened, and may be shrunken if this method of treatment is employed before they have broken down, and while it is true that in cases of recent origin many of the swollen glands may

entirely disappear, this is not usual. The majority of the glands which the surgeon sees have already broken down and softened in their interior, and the cheesy pus may be simply incapsulated. It is of this variety particularly that I wish to speak.

Most of these cases are of long standing and have been subjected to various plans of treatment by ointment, massage, counter-irritants, etc., before the X-rays are employed. It is only after all the various methods have been tried that the surgeon is requested to operate.

The overlying skin is now found to be thickened, indurated, and much toughened. The glands cannot be peeled out, or pulled away from the blood-vessels and nerves by blunt dissection, but each step must be taken with the greatest deliberation and every particle of tissue that is removed must be separated by cutting with the knife or scissors. The blood-vessels, from the fibrous thickening of their sheath and the surrounding tissues, cannot be easily distinguished; and are only saved from being cut by the utmost vigilance. The dangers, the difficulties, and the time consumed in the operation are thus very materially increased, and my own belief is that the only action of the X-rays in these cases is distinctly harmful.

I have had one case of cystic disease of the left breast in an unmarried woman of 37 where the X-rays were employed, and which subsequently came to operation. The history was that a year before she had discovered a lump in her left breast, but it gave her no discomfort. She consulted a physician, who advised operation, but as her father was very ill and she was nursing him, she refused operative treatment at that time, as she would not leave him. Her family history was bad, as her mother had had cancer of the uterus and her father's illness was supposed to be cancer of the stomach. She elected to try the value of the X-rays and submitted to twenty-eight treatments of ten minutes each. As a result there was an extensive burn of the skin of the whole breast; the outer layer of the skin peeled off and this was true also of the areola nipple. I saw her first when this burn was at its worst. I could feel that the breast was enlarged

and that in the gland there was a swelling, which I took to be, and still believe to have been, a cyst. Shortly after this her father died and she then came to me and submitted herself to operation.

The skin over the whole of the breast was very dense and hard and in a condition such as I had never seen before. It was almost impossible to cut through the skin with a very sharp knife without using extreme force. The breast and both pectoral muscles were removed and the axilla cleaned out. At this time I could not distinguish definitely a tumor, but the whole breast was thickened and indurated. The breast, after its removal, was cut open and macroscopically seemed to be simply a mass of fibrous tissue with few of the characteristics of the normal gland. There were one or two small retention cysts. She made an absolutely uneventful recovery, but the wound did not heal quite as rapidly as is usual. The breast was sent to Dr. Longcope, of the Ayer Laboratory, who made this report:

The specimen consists of a breast, pectoral muscle and axillary fat. Section has been made through the breast. It is covered by a piece of skin 1 cm. in diameter. The center appears yellowish and slightly ulcerated. On section the cut surface discloses opaque white breast tissue, which is slightly larger than normal. It is fairly well circumscribed and has a more or less pyramidal form. The margins are well defined, particularly the lower margin, which is separated from the pectoral muscle by a zone of fat about 1 cm. in thickness. The breast tissue is quite firm but flabby. Scattered through it can be seen bits of fat. Here pectoral muscle appears normal. The axillary lymph glands are small, soft and pink in color.

Sections are made from all parts of the breast. They show a coarse net-work of rather dense fibrilated connective tissue enclosing lobules of fat-cells of various sizes. The connective tissue contains extremely few cells. In many sections the acini are lined by two regular rows of cuboidal epithelium which do not differ essentially from the normal, except that many of the cells contain large fat droplets. Sections through four of the axillary lymph nodes show chronic inflammatory changes. There is some hyperplasia of the lymphadenoid tissue with thickening of the reticulum, especially in the lymph sinuses and proliferation of the recticular cells.

The lymph sinuses are converted into solid cords. The capsule is regular but a little thickened.

Skin.—The epidermis is thickened. At one point there is a small area of ulceration. Here the corium is covered with a thin layer of fibrin. Polymorphonuclear leucocytes and red blood-cells. The corium is greatly thickened and the papillary process atrophied. It consists of rather dense connective tissue infiltrated in circumscribed foci by cells usually of one type. These cells are scattered through the corium, but are most numerous beneath and about the ulcerated surface. They are somewhat smaller, irregular, often have a shriveled appearance and the protoplasm stains intensely blue in hœmotoxylin and eosin stains. The nuclei are very black and piknotic. Sometimes they show a central unstained band which gives the nucleus the appearance of a diplococcus. About the ulcerated area there are also many small round cells, a few polymorphonuclear leucocytes and occasional large multinucleated giant-cells.

Diagnosis.—Chronic mastitis with atrophy of mammary gland. Chronic inflammation of skin with thickening of corium. Chronic inflammation of axillary lymphnodes.

Dr. Longcope states in a letter which accompanies this report that there was no evidence of malignant growth, but, on the contrary, there was marked atrophy of the glandular tissue with extensive fibrous overgrowth in a diffused manner. He considers the thickening of the skin must have been caused by the X-rays, but whether the changes in the breast itself are due to this cause he cannot state positively.

In a very carefully written article by Dr. A. G. Ellis, "The Pathology of the Tissue Changes Induced by the X-Ray" (*American Journal of Medical Sciences,* January, 1903), he quotes Huntington as stating that the X-ray burn consists of an acute, subacute, or chronic necrobiosis. He quotes Rudis-Jicinsky as saying that, "The irritation of the peripheral extremities of the sensory nerves causes paralysis of the vasomotor and vascular cells affected. Spasmodic contraction of the arterioles and capillaries follows and the proper nutrition of the cells is impaired. With these changes, which are directly depending upon disturbances of the circulation,

there are changes in the parenchyma cells of the affected region. The death of tissue follows, being caused by permanent stasis in the blood-vessels. This is carried out by Codman's statement (Ellis) that the reports of microscopic examinations of the excised tissue agree in stating that similar arterial branches are occluded and the appearances are not unlike those of necrosis and inflammation due to other causes.

Scholtz (Ellis) says that the cell elements under the influence of the X-rays undergo a slow degeneration, chiefly in the epithelial cells; that the nucleus as well as the protoplasm of the cell is affected. This article by Dr. Ellis is so exhaustive and carefully prepared that it should be read by all who are interested in this subject.

In the X-rays we have a very powerful therapeutic agent, whose power for good is undoubtedly very great in inoperable malignant disease of a superficial character and as a prevention of the recurrence of malignant disease after radical operation; but I believe that its use should be confined to this class of cases. I do not believe, in view of the extreme difficulties and complications which are produced by its effects, that it should ever be employed upon the tissues before surgical operation is undertaken.

Dr. A. G. Ellis said he had made no studies of X-ray tissue —those reported in the paper mentioned by Dr. Taylor. In the enormous literature which was accumulated, however, are many references to the untoward effect of this agent, and in the present state of our knowledge it should be used with caution. The numerous cases of sterility in X-ray workers reported by Dr. F. Tilden Brown are examples of its unexpected influence. The cases cited by Dr. Taylor further emphasize the necessity of careful and discriminate use of this illy understood force.

Dr. John H. Gibbon spoke of a case of enlarged cervical glands in which he had operated during the past summer. The patient in the spring had a prolonged treatment with the X-rays. The glands were most difficult to remove because of adhesions. It required two hours and ten minutes, with the help of an experienced assistant, to remove about thirty glands, whereas the next

day twice this number were removed with the help of an inexperienced assistant in one hour. Every gland was so adherent that it required minute dissection to separate it from the surrounding tissues. It was impossible to remove the glands in a continuous chain.

It is regrettable that so many of the less radical measures which are employed in the treatment of surgical diseases cannot be used without interfering with subsequent operation, but yet this is a claim which is frequently made for them. No better illustration of this statement can be given than the difficulty encountered in operating for hernia where the injection treatment has been tried.

Dr. Richard H. Harte recalled a case of a child in which the cervical glands had been treated for some weeks with the X-ray, hoping by this means to avoid an operation. When, however, removal of the glands was attempted, the dissection was very difficult, as all the anatomical conditions were changed. The glands were adherent to the surrounding tissues, requiring forced dissection. In the course of a couple of weeks a small gland, which had been overlooked at the time of operation, broke down and suppurated. Dr. Harte is inclined to regard the use of the X-rays in cervical glands of the neck as most unsatisfactory.

INDEX.