TRANSACTIONS OF THE PHILADELPHIA ACADEMY OF SURGERY.

Stated Meeting, December 6, 1897.

The President, W. W. KEEN, M.D., in the Chair.

TEMPORO-MAXILLARY ANKYLOSIS.

DR. J. EWING MEARS exhibited a man, twenty-one years of age, who suffered from occlusion of the jaws due to cicatricial contraction, dating from the eighth year of his age, when he had a severe attack of scarlet fever, with intense inflammation of the mucous membrane of the buccal spaces, more severe on the left than right side, with copious discharges of saliva and pus from the cavity of the mouth, lasting for at least two weeks. The conjunctiva of both eyes was affected, the inflammation being very severe, with copious discharges of mucus and pus, and closure of the eyes, vision being obliterated for two weeks. Very soon after this attack of scarlet fever closure of the mouth was present. Patient used wedges of soft pine wood for the purpose of keeping his jaws separate as far as possible. At this time the distance to which the jaws could be separated was about a half inch, and the degree of possible separation has gradually lessened, until now, October, 1897, the anterior teeth cannot be separated to a greater extent than a tenth of an inch.

All of the teeth in the upper jaw are in a state of decay, some absent on the right side. In the lower jaw of right side the lateral and central incisors are in a state of decay, as well as the posterior teeth as far as can be seen, and turned inward towards the oral cavity. Many of the teeth of both upper and lower jaw are absent, the patient stating that some of them were swallowed, as he was unable to get them out of the cavity of the mouth when they became detached. Others, being much decayed, came out in pieces, which were removed from cavity of mouth with a hairpin. On the left side, examination shows that the buccal space is occupied by a firm, resisting mass of cicatricial tissue, extending

from the position of the canine tooth of upper and lower jaw to the last molar of each jaw. On the right side a mass of cicatricial tissue, not so large in extent as the left, occupies the buccal space, extending from the second bicuspid tooth to the position of the last molar tooth of each jaw. The lower jaw presents some indications of absence of growth, with some retraction of the chin, giving an appearance to the face which is characteristic in these cases. On the left side, in middle of cheek, on the external surface, is a cicatrix about a half inch in length, directed horizontally from before backward, which cicatrix is the result of an incision made into an abscess, which was thought to be connected with a diseased tooth, occupying the molar region. Patient states that this abscess was opened in August, 1897. Patient takes food, mostly of soft and liquid character, with a spoon, whose point is placed between the teeth. Patient has not suffered with any attacks of pharyngitis or laryngitis. Patient is five feet ten inches in height and weighs 122 or 123 pounds. Muscular system is fairly well developed, showing nutrition to be good. Has had attacks of coryza of limited duration.

There is slight impairment of hearing in the right side, this ear having been affected when he had scarlet fever, at which time there was a discharge of pus from the ear, which has continued, at intervals, up to the present time.

October 30 an operation was performed, and the jaws were opened to the extent of two inches, and seventeen badly diseased teeth were removed. The lower jaw on the left side was found to be necrosed and the process was cut away. The cicatricial tissue on each side in the buccal spaces was freely divided, leaving a mass about a quarter of an inch in thickness on each side. The masseter muscle was divided freely on each side. On the left side all of the tissues were found infiltrated with plastic matter, the result of an attack of inflammation on that side, which led to necrosis of the process, caused possibly by the diseased teeth. The jaws were separated by introducing wedges of soft pine and afterwards using the gag. Two ligatures were introduced, one on each side, extending from the canine tooth to the third molar carried behind the cicatricial tissue, between its posterior surface and the integument. Into the buccal spaces were packed six pieces of 5 per cent. iodoform gauze, an inch wide, a yard long, three on each side. Patient was put to bed and rallied promptly.

Some bleeding occurred and swelling of face. Patient was kept on light diet for several days.

Three days later the gauze was removed, the cavities were syringed with a weak solution of carbolic acid, gag was used to separate the jaws, and fresh gauze introduced. Dressing was done, and gag used every third day, until November 20, when patient was again etherized, and four more teeth and portions of the bone that had become necrosed were removed.

The canals formed by the ligatures were found free from hæmorrhage on passing the probe and the intervening tissue was divided by the blunt-pointed bistoury carried along the grooved director, and the cavities were packed with gauze, which was removed the third day, and renewed after mouth was cleansed, and gag used. Since November 25 gag has been used twice daily, and December 2 gauze was permanently removed. Patient can now open his mouth to the extent of one inch and a half without using the gag and to two inches with its aid. The temporo-maxillary articulations and all of the elevator muscles of the jaw were very rigid from disuse. On the left side inflammation had still further increased the density of the tissues, and made the task of exercise of the muscles and joints with the gag more difficult. Absorbents, stimulating embrocations, and massage are used to facilitate the work. The rigid condition of the structures can be appreciated when it is considered that the jaws have been firmly locked for a period of thirteen years. The patient will employ the gag, the use of which gives him no pain, for two months.

DR. DEFOREST WILLARD said that one of the nearest approaches to an ether death that he had ever seen was in a case of occlusion of the jaws, in which there was only about half an inch of space between the jaws. The patient had taken solid food before the etherization. During the operation vomiting occurred, and he very nearly died from suffocation before relief could be afforded. It was impossible to quickly clear his mouth through so small a crevice.

He asked Dr. Mears if he made a large open incision through the mucous membrane in order to turn out the necrosed process.

DR. MEARS replied that there was no nausea or vomiting in this case; it would have been a very serious matter if this condition had been present.

He recalled the case of a boy who had occlusion of the jaws, who had a small space made for him by a dentist by extracting an incisor tooth, and through this he was fed. On one occasion he went to his mother's pantry and found a pie of which he was very fond. He ate this pie by pushing pieces with a stick into his mouth. He filled his mouth full and came very nearly suffocating.

Esmarch had proposed to relieve certain cases of locked jaw by section of one or other side of the lower jaw with an attempt to form a false joint. Esmarch called attention to this subject in a paper, which he read at the German Congress at Göttingen, and alluded to the various operations which had been suggested and performed to relieve occlusion due to cicatricial contraction, as in this case, calling attention to the vain efforts which had been made by incision, excision, transplantation of mucous membrane, and of the integument into the buccal space, hoping that by so doing reformation of the cicatricial tissue would be prevented. All of these methods were valueless, because inevitably the scar tissue reformed and the contraction was firmer than before. He therefore advised abandonment of any effort to destroy the cicatricial tissue, but recommended allowing it to remain and advised the formation of a false joint. Dr. Mears had never done this operation, because he did not think it gave good results. It creates deformity, and the patient can open the mouth on one side only. If it is a case of double occlusion, it is of no avail. All of the operations heretofore suggested were performed by incisions outside of the mouth, while all Dr. Mears's operations, whether the occlusion is due to cicatricial tissue, formation of an osseous band holding the jaws together, or to a synostosis of the articulation, are done within the mouth. He had operated successfully in cases where occlusion had existed for sixteen, seventeen, eighteen, twenty-seven, and thirty-two years. In all of these cases, where cicatricial tissue has been the cause, he had pursued the same method as in the patient presented. Where an osseous band held the jaws together he divided with a saw. Where the joint was involved he made a section of the ramus, carrying the knife beneath the masseter muscle, and then passing in a saw, and dividing the bone, the temporal and external pterygoid muscles, and removing condyloid and coronoid processes with the forceps. His object in doing this

was to form a capacious false joint. Originally he operated by simply dividing the process, but found that this was not satisfactory. He tried as far as possible to avoid the position of the inferior dental foramen. All of these operations he had done through the cavity of the mouth. This is of great advantage in all cases, especially of females. He thought the trouble had been that surgeons have been afraid to make large enough cavities, and in the process of repair the results have not been so good as they would have been had they been larger.

THE ABUSE OF IODOFORM.

DR. W. G. PORTER read a paper in which he sketched the history of the introduction of iodoform into surgical use, and gave extracts from the writings of Mosetig-Moorhof, Moleschott, Miller, Burkhardt, Stillé and Maisch, Le Dentu, Hayes, and others. He called attention to the possibility of toxic effects from its too free use, quoting especially Treves and R. W. Taylor upon that point. As to the manner in which iodoform acts favorably as an application to wounds and granulating surfaces, he gave the views expressed in Hare's work on therapeutics. After this review of the subject he earnestly protested against its routine use to the exclusion of other dressings equally as good and free from its many objections. He said that the general practitioner seemed to think that the only treatment for every furuncle, carbuncle, swelling, ulcer, incision, or wound was to cover it with iodoform until their patients went around like a walking pestilence, the objects of loathing and disgust to their friends and themselves, and of just opprobrium to their physicians. In hospitals there might be some excuse for its free and practically unlimited use. But in private houses and particularly in private patients who were going about attending to the affairs of life there could certainly be no excuse for its use, unless in the rare and altogether exceptional cases in which nothing could possibly take its place. He asked what right any physician had by his treatment to direct the attention of every one to his patient. And yet to-day how few patients who are afflicted with chancroids, herpes, chancre, or almost any other mucous or cutaneous lesion, are spared the infliction of iodoform. He gave two examples by way of illustration which had recently come to his attention. The first was a man with a syphilitic ulceration of

his face, who had been subjected to the iodoform treatment for a period of four months, absolutely without relief, the ulcer constantly spreading under the caked and incrusted mass of iodoform. He was the proprietor of a prosperous restaurant in a business part of the city, but the combined odors of the iodoform and the badly treated ulcer drove his customors away, and in less than a year he was a bankrupt. The removal of the iodoform and the accumulated filth with proper local and constitutional treatment cured him in three weeks,—but his customers had gone never to return. The second case was a man who had been operated on for appendicitis. A fistula resulted. Not fæcal, but discharging freely a non-odorous albuminous fluid, the only treatment prescribed for which was packing lightly with iodoform gauze. He had his living to make, was able to go about and attend to his business after a long and extensive illness, and yet he was constantly handicapped by the dreadful odor of iodoform, from which he could never escape. The removal of the iodoform gauze and the more thorough drainage by a lead wire healed the fistula in a few weeks.

DR. THOMAS G. MORTON said that he did not think the use of iodoform was increasing, but, that on the contrary, it was decreasing. In his ward at the Pennsylvania Hospital there was no patient at present upon whom it was being used. Occasionally, however, iodoform gauze is used as a packing or drain in or about foul cavities. Acetanilide gauze has largely superseded iodoform. A number of druggists who do a large business had told him that the call for iodoform had lessened enormously.

DR. DEFOREST WILLARD said that he used iodoform very little. He would much rather smell fæcal pus from the ischio-rectal fossa than iodoform. Thymol diiodide is cheaper and better for fresh wounds. Thymol and acetanilide are sufficient for nearly all cases. He uses iodoform gauze in foul pus cases, but in all clean wounds preferred thoroughly dry sterilized gauze. By using thymol diiodide one is not obliged to pay for the trade name, aristol.

DR. R. H. HARTE agreed that public feeling was opposed to the odor, but he did not think it half as objectionable as many of the perfumes so noticeable on the women who go to the theatre. Like every good thing it has been abused, but still it is a valuable drug. All recognize the virtues of mercurial salts,

but these also have been abused. He thought iodoform was used nearly as much to-day as ten years ago; certainly during his half of the term at the Pennsylvania Hospital it was used as much as it ever was. At the Episcopal Hospital it was also used very extensively in the wards by his colleagues. As to the poisonous effects, he had never seen any bad results in his own practice, but he had seen bad effects from it where it was used as a primary dressing in extensive burns. He remembered a series of these cases that were treated by iodoform, and almost without exception poisonous symptoms followed. It was a very valuable therapeutical aid. In tuberculous joints iodoform in glycerine is of great use. It is also very valuable in bone-disease. His method of using it in cases where he had removed a large amount of bone was to clean out the cavity thoroughly, wash thoroughly with iodoform and glycerine, and pack with iodoform gauze. He thought the results obtained in dealing with bone-disease in this way were unquestionably much more satisfactory than with the old methods with carbolized oil. Although iodoform was greatly abused, he considered it a most valuable topical therapeutic agent.

DR. H. R. WHARTON said he did not remember ever having seen a case of iodoform-poisoning. As regards poisoning, the conditions where it would be most favorable for its development would be in the modern method of using iodoform emulsion injections. He knew cases where it had been used for a number of weeks for tuberculous joints, but he had never seen symptoms of poisoning. He did not use it as much as he formerly did, but he believed it to be a very good remedy in certain cases, as in bone cavities and especially in cases of abscess about the rectum, where no packing could take its place. Used in the same way in operations about the mouth iodoform packing remains sweet longer than any other packing. Experience shows that its use is less safe at the extremes of life.

DR. GEORGE ERETY SHOEMAKER said that he had been unable to find anything which would take the place of iodoform in securing cleanliness in a *moist cavity*. He had had gauze impregnated with aristol, acetanilide, and other materials, but had found that iodoform gauze would remain sweet twice as many days in a moist cavity as would any other preparation. He thought, therefore, that nothing could take its place when, for

example, one is obliged to use a gauze drain after abdominal section for serious types of pelvic abscess or in some cases of appendicitis, or in packing the uterine cavity. The remarkable duration of the influence of iodoform in keeping a drain sweet was recently illustrated accidentally. He had done a vaginal hysterectomy for pyosalpinx and metritis, and had put in three strips of iodoform gauze for drainage. In removing these one piece, about three yards in length, was left behind, and remained in the abdominal cavity for one month with an end protruding into the vagina. During this time it was thought that the correct number of pieces had been withdrawn. The patient made a nice recovery from operation, and at the end of three weeks was up and about the ward, with a normal temperature. The other piece was found at a routine examination and gave no trouble. On withdrawal it was still yellow in places and did not smell offensive. To his mind there was no other substance which would have kept it sweet under such circumstances.

DR. W. JOSEPH HEARN said that the rational use of iodoform was as much indicated to-day as it ever was. Some people use it for syphilis, but it is perfectly useless. It is useful in chancroids, and nothing can take its place. Its use to the public mind has not the same significance now that it formerly had. People used to think it meant venereal disease wherever it was smelled. When he had an operation in which there was pus and he had to drain he used iodoform; where there was no pus he did not need anything. He rarely used the powder in any surgical work, but the iodoform gauze whenever indicated.

DR. G. G. DAVIS said there were two classes of cases in which powders are used antiseptically, one in which the drying element was desired and the other in which antisepsis was to be obtained. In the latter case he did not think there was anything to be compared to iodoform. He had tried various substitutes, but they had not compared in efficacy to iodoform. In the other class of cases he thought it is almost immaterial which of the various powders was used. Iodoform is the most reliable agent we have to stop suppuration when actual contact can be secured. It is the most permanent of all the available drugs, and its action does not cease within a short time of its application; neither is it readily dissolved. The gauze impregnated with it retains its action for a long time, and it is for that reason preferable in many

cases to a plain packing. Plain gauze becomes impregnated within a day and contains no material for the prevention of the putrefactive process. Iodoform gauze seems to stop the secretion and prevent further putrefaction. He had tried one after another of the various remedies, and the only one he really felt that he could rely upon was iodoform. For comfort and drying of wounds and absorptive procedures almost any one of the powders can be used with similar results, but not for antisepsis.

As regards poisoning, he had seen two or three cases in old people in which there was a certain amount of constitutional disturbance, and in which the iodoform had been used in connection with operative procedures. In those cases one could not determine exactly the relative responsibility of the operative procedures and the iodoform, but subsequently the patients developed delirium or mental disturbance, which he believed were due to the iodoform. Although those which he had seen had not been of an extremely advanced and serious type, still the mental disturbance in those of advanced age had been so marked as to cause him to be very careful with them.

DR. THOMAS S. K. MORTON stated that his present employment of iodoform was limited to its use as a gauze for packing and drainage, especially where dryness and antisepsis were required for prolonged periods; as an injection in emulsion with glycerine for tubercular joints or abscesses; and, occasionally, in the shape of a five-grain suppository in tubercular affections of the rectum. He could not remember having used the substance as a dusting powder for several years. He had seen violent inflammations and vesicular eruptions following its use upon the skin, especially when compressed against the cuticle under a splint in children. He had frequently observed more or less serious constitutional effects from a copious use of the powder in former times, and was ever mindful of the unpleasant possibilities even of iodoform gauze packing. For the latter he has never been able to find a satisfactory substitute, but was inclined to think that iodoform gauze as commonly used was entirely too strong. Dr. Morton for two years has had his gauze prepared of 5-per-cent. strength in bandages of various widths and five yards long. These are steamed at 230° F. for half an hour, by which time about from 1 to 2 per cent. of the iodoform has been vaporized. Hence his gauze, when introduced into a wound, is

not stronger than 3 or 4 per cent. of its weight. From this weak gauze he had noticed slight congestive symptoms with rise of temperature, and mild delirium a few times when large quantities had been inserted. The strips were never lost in wounds, because only one continuous piece of bandage was usually put in. Where dusting powders are required, he has come to rely largely upon bolted acetanilide, or acetanilide and compound stearate of zinc, or acetanilide and boric acid. Acetanilide as a gauze has been a failure because of rapid absorption of the drug by the tissues. For chancroids he employs a powerful spray of peroxide of hydrogen, and supplies the patient with a half ounce of acetanilide with instructions to wash with soap and water twice daily, and afterwards heap as much of the powder upon the sore as it is possible to retain. Then the prepuce is drawn over without dressing. This will cure nine-tenths of all chancroids in a few days. The other tenth will require nitric acid or other destructive agent in addition.

DR. J. EWING MEARS said that possibly he had given iodoform as thorough a test as any one in its use in the cavity of the mouth. He had used it for many years in wounds of the mouth and in suppurating cavities in a 5-per-cent. strength. Never had he seen a well-defined case of iodoform-poisoning, but in one or two cases he had seen some effect manifested in the urine by its absorption, but no delirium or any well-defined symptoms. It may appear very strange, but patients do not complain generally of its use in the mouth. They may complain slightly of it at first. The first dressing which he makes is three days after the operation, and then again in two days, but in cases of copious discharge every day. He had had complaints in private practice, and remembered one case who went away, but finally came back, and he tried it again. It was a case of syphilitic ulcer, and he did not care about letting all his friends know of his condition. He had occasionally used aristol, but by preference he employed iodoform. He had seen nothing in his practice which would compel him to give it up.

RADICAL CURE FOR INGUINAL HERNIA.

DR. JOHN B. DEAVER read a paper entitled "A Modified Operation for the Radical Cure of Inguinal Hernia," for which see page 459.

DR. R. H. HARTE said that his experience in operations of this kind had extended over quite a number of years, and he had tried to follow the cases up. One case returned the other day on whom he had operated three years ago. The man was a bad subject, and had a recurrence. This was the only recurrence he had had an opportunity of seeing, but he had no doubt there had been others. The one point in his operation, which is a modified Bassini, is in the closing of the canal. The effect of transplanting the cord necessarily weakens the abdominal wall at that point. There is no trouble about closing the canal. Even when the operation is carried out right he had seen cases where it had recurred. Only recently a man had come to him with a recurrence. He had attempted to operate several times, but the attempt had been worse than useless. Some time ago there was a case at the Pennsylvania Hospital who had a mania for having his hernia operated upon. He thought the method of using the sac as a plug to be good, and he had done it in a number of cases, but not as done by Dr. Deaver, although the results seemed to be very satisfactory. If one takes the best points of the operations of Bassini and of Macewen one can get a fairly good abdominal wall, but the weak point will be at the so-called internal abdominal ring.

MATTRESS FOR OPERATING-TABLE, HEATED ELECTRICALLY.

DR. DEFOREST WILLARD presented a mattress made by the H. W. Johns Manufacturing Company, of Philadelphia, being constructed of a mesh of insulated wires, covered with rubber sheeting for protection from blood and water. It is made of a size convenient for operating-tables, and its supply can be obtained from any ordinary electric light socket by the removal of the lamp-bulb.

It is about half an inch in thickness, and is of especial service upon glass tables, which are cold and depressing. The current is regulated by a cock which controls the amount of electricity to three grades. Should No. 3 become too hot for the patient, a pleasant temperature can be maintained at either stops 1 or 2. The occasional attention of the anæsthetizer is all that is required; but if the rubber is first covered with a blanket and

then with a sterile sheet, burning of the patient need never occur, even when a full current is turned on.

In long operations, and in all cases where the loss of blood is great, either during the operation or before, as in accident cases, the saving of the loss of animal heat is most important.

Most surgeons realize too little the importance of avoiding the depressing influence from lowering of the temperature that so often occurs. Many elements conspire to depress the patient during the operation, the effect of ether, hæmorrhage, exposure of the surface, wetting of the body from solutions, etc.

Dr. Dudley P. Allen (*Transactions of the American Surgical Association*, Vol. xiv, p. 367) has well shown, in his experiments upon dogs, the benefit to be obtained during the anæsthetization, by husbanding this important element of animal heat, and that the radiation of heat should be prevented, by covering the patient with cotton; the loss of normal heat being in direct proportion to the exposure of the surface. The effect of ether itself is decidedly to lower the temperature. He shows also that the temperature of the room has a decided effect on the temperature of the individual, and that it should not be too high nor too low.

The use of this mattress in patients of low vitality, as in excision for tubercular hip-disease, protracted laparotomies, prolonged excision of glands, etc., is of the greatest importance.

In severe crushes also, where the individual has not only suffered largely from loss of blood, but has also endured the shock of traumatism, together with possible exposure upon the cold ground, this warm mattress offers, during operation, the best means of turning the scale in his favor.

When such a patient is removed from the table, moreover, this pad placed beneath him, on his bed, will maintain an equable temperature throughout the night, far better than hot water-bags, or other measures.

Its cost of thirty dollars is but little compared with the lives that it may save.

Dr. Willard had used the mattress shown for a year, with the most satisfactory and helpful results. The wire had not failed him, nor broken once in that time.