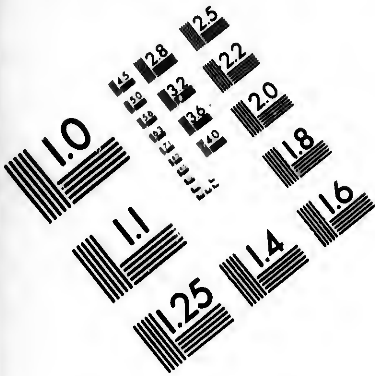
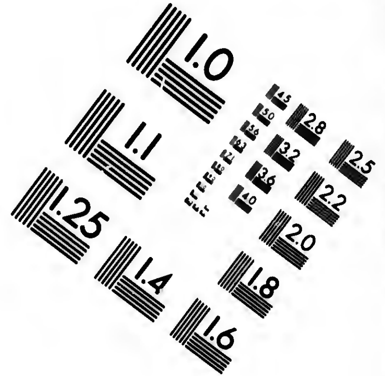

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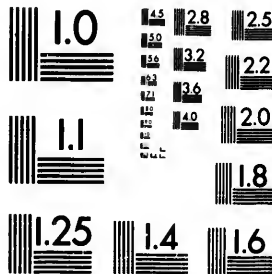
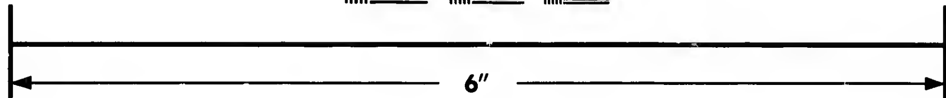

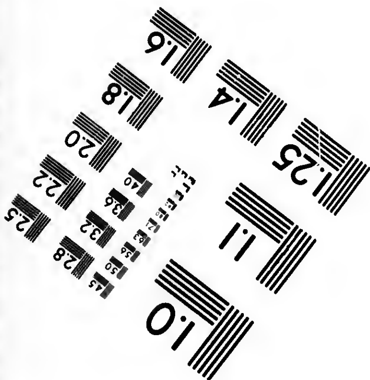
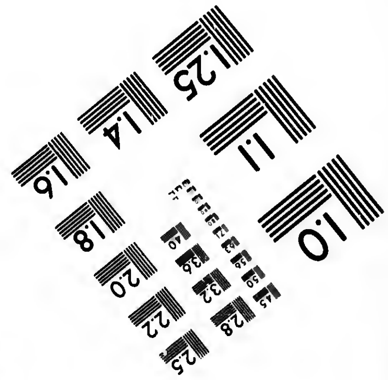

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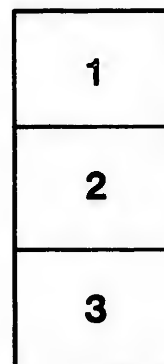

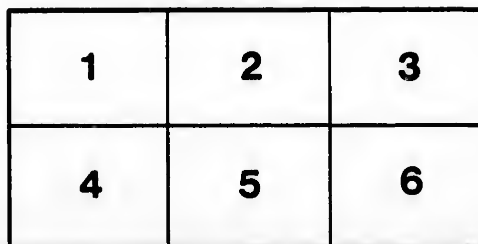

THE TREATMENT OF TUBERCULOSIS OF THE BLADDER THROUGH A SUPRA-PUBIC SECTION.

BY

JAMES BELL, M.D.

Surgeon to the Montreal General Hospital and Associate Professor of Clinical Surgery McGill University.

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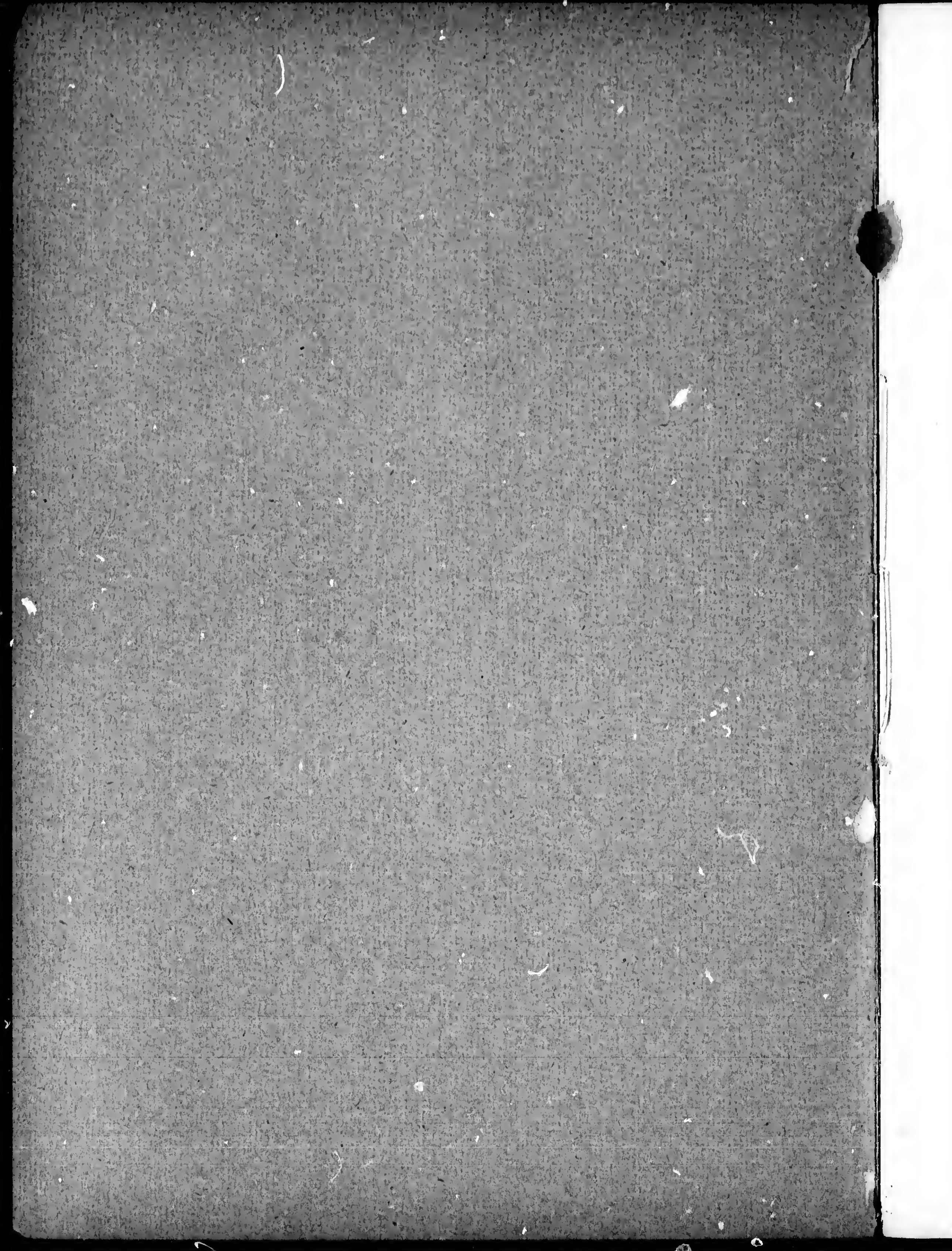
FOR AUGUST, 1892.



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THAT the bladder is frequently the seat of tuberculosis, either primary or secondary, is a well established fact, and observation shows that generally speaking the progress of the disease in this situation does not materially differ from its progress in other localities. Its favorite site is in the trigone and around the neck of the bladder, while the disease remains for a long time confined to the mucous membrane, and only in advanced cases are the deeper tissues invaded. The diagnosis is difficult, and often a positive diagnosis is impossible, for the bacillus is frequently to be found only after repeated examination, or not at all. The disease may be primary and confined to the bladder, but is usually associated with, and probably most frequently, secondary to tubercular lesions elsewhere, especially in other parts of the genito-urinary system—notably in the kidneys or testicles. I do not propose to discuss the many interesting problems in connection with the etiology and mode or modes of transmission and extension of the disease, nor to deal with other methods of treatment than that designated in the title of this paper; but to limit the discussion to those severe and advanced cases in which general medical and local treatment have failed to give relief, and in which the pain and frequent or constant desire to micturate have rendered the patient's life useless, if not burdensome. Such are the following cases:

Case I. W. K., æt. 26, laborer, was admitted to the Montreal General Hospital on December 26, 1889, suffering from frequent and painful micturition—the urine containing blood and pus. The patient, who had been absolutely deaf from the age of six years, was much emaciated and wore an expression of great suffering. He attributed his deafness to a severe ill-

ness which followed a kick from a horse on the tibia when he was six years old (pyæmia ?). Patient had always lived a regular life, and had never had venereal disease in any form. There was no family history of tubercle. Present illness began twelve months prior to admission to hospital with frequent micturition, straining, pain at the point of the penis, and the expulsion of a few drops of blood at the end of the act of micturition. About two months after the onset of his illness he first noticed cloudiness of the urine, which had continued up to the time of admission. All these symptoms increased in severity, and at times, especially after exertion, the flow of blood was considerably increased, although it had never been great. The symptoms were also more severe in day time, and when the patient was actively employed. Patient also stated that at about the same time as the beginning of the urinary symptoms he had suffered from cough and some night-sweating. His condition when admitted is described as follows in the case book: "Patient is greatly emaciated; is in constant pain; micturates about every half hour—at times as often as every ten minutes. Micturition is followed by tenesmus, and the evacuation of a few drops of blood. Deep pressure above the pubes causes pain. The urine deposits a considerable quantity of mucopus, is neutral in reaction and yields to boiling and nitric acid a deposit of albumen,—about 6 per cent. by volume in the test tube. The quantity of urine is difficult to estimate, but is probably about forty ounces daily. Patient is so disturbed at night that he gets hardly any sleep. The heart and lungs are normal, the pulse rapid, temperature generally normal, but with slight occasional rises of a degree or two. Constipation and diarrhœa alternating." Patient was etherized and the bladder explored. It was found to be small with rigid walls, and bled freely on the introduction of a sound. Bleeding was so easily excited that the cystoscope could not be used. Patient was kept in bed on bland liquid diet, soothing anodyne local applications and morphia in the form of rectal suppository and hypodermically for five weeks without improvement when I decided to operate. His condition at this time was thoroughly miserable. He could get no sleep even with large doses of morphia and equally welcomed the proposal to operate as a chance of giving him relief. On February 4, 1890, the bladder was opened above the pubes in the ordinary way with the patient in the Trendelenburg position, and a Petersen's bag in the rectum. On opening the bladder the mucous mem-

brane throughout was found to be of a deep livid red color, but free from ulceration except in the neighborhood of the urethral outlet. By means of a bivalve speculum and a small electric lamp the whole interior of the bladder was carefully inspected. A fringe of irregular superficial ulceration encircled the urethral orifice and oozed blood with considerable freedom. There was no induration surrounding these ulcers which were limited to the mucous coat and did not extend to the walls of the viscus. They were each carefully cauterized with the Paquelin Thermo-Cautery; the bladder flushed with a solution of salicylic acid and borax (1-1000), and a large drainage tube placed in the wound. There was a good deal of abdominal tenderness for three or four days after the operation which I attributed to the fact that the pre-vesical peritoneal fold had been stripped back for nearly an inch to allow sufficient space for opening the bladder. The urine now flowed away through the drainage tube quite clear and free from blood, and in a couple of days the old pain about the neck of the bladder and the point of the penis had entirely disappeared. In ten days the temperature, which had risen after operation to 102° F. had settled down to the normal, and the patient began to improve in every way. He could now sleep without opiates; his appetite improved and he declared himself freer from pain and discomfort than he had been for more than a year. The drainage tube was removed thirty-six days after operation, and the wound had closed completely three weeks later. Patient was then allowed up. He could hold his water for an hour, and when passed it was acid, transparent and free from pus and albumen. He was discharged three months after operation in good general health; free from pain and irritation about the bladder; greatly increased in weight and able to retain his urine for nearly two hours in day time and somewhat longer at night. Unfortunately the record of this case ends here, as I have been unable to find any trace of the patient since he left the hospital. I have gone very fully into details in reporting this case, as I think it may be considered fairly typical, although tubercle bacilli were not found in the urine. In fact the urine was not as carefully and systematically examined in this respect as it should have been.

Case II. H. P. age 33, farmer. Had suffered for three years with frequency of micturition and muco-pus in the urine. The symptoms had gradually increased in severity, and for a year before operation patient had occasionally found some blood at

the end of the stream. For about six months the symptoms had been very urgent. He was obliged to pass water about every half hour, and suffered from incontinence at night. There was constant pain about the neck of the bladder. The urine was acid, containing a varying quantity of muco-pus, in which a moderate number of tubercle bacilli were discovered. Patient had never had any venereal disease, and there was no family history of tuberculosis. The lower half of the left testicle and epididymis was occupied by a hard smooth mass (tubercular disease of the testicle). The other organs were healthy. On the 9th of October the bladder was opened above the pubes, as in the preceding case. The appearances were also very similar to those already described,—a contracted bladder with thick walls, deeply congested mucous lining, and superficial ulceration in the trigone and around the urethral orifice. These were scraped with a Volkmann's spoon and cauterized with the thermo-cautery. The immediate result exceeded my expectations. The patient recovered from the anæsthetic with the bladder pain completely relieved. Not a bad symptom followed; clear acid urine flowed through the drainage tube, which was removed three weeks after operation. Patient returned to his home in the country five weeks after operation in good health and free from bladder irritation, but with a small fistulous opening remaining where the drainage tube had been. On February 9, 1891, patient returned to have the testicle removed, as I had advised. In the meantime he had not suffered from bladder symptoms, beyond the discomfort of the urinary fistula which had increased in size. On the 19th of February the testicle was removed and the bladder sinus scraped and packed with iodoform gauze. He remained seven weeks in hospital, during which time he was quite free from bladder irritation. The urine was clear, acid and normal in every respect with the exception of a little excess of mucus. The sinus had nearly closed—only a few drops of urine oozing out at times. For my latest report of the patient I am indebted to Dr. T. L. Brown, of Melbourne, who visited him at my request and wrote me as follows on the 9th of August last (1891): "The supra-pubic wound is not yet entirely healed, but the opening is very minute—about large enough to pass a fine straw through. He has very little difficulty with his urine. It never trickles out of the opening when walking, but does so slightly when he is either sitting or lying down. When tired it will pass involuntarily by the natural channel in small quantities, otherwise it does not bother him. He never suffers pain

unless he retains the urine too long, and even then pain is slight. His general health is much improved, being stronger as well as better in appearance than before the operation. He rests well and has little or no trouble at night. He has a good appetite, and attends to his farm work, doing light work in the hayfield, etc. On the whole he is well satisfied with his condition, and thinks that if he could only have the small sinus closed permanently he would have little to wish for. The urine is clear and apparently normal." Since writing the above I have received the following report from Mr. Brown, who again visited him at my request. He says: "I saw P—— yesterday (April 21, 1892). He is still gaining in strength; is able to do a good day's work, and feels that he has a good lease of life yet. The opening above the pubes has practically closed; only very occasionally it leaks a little. Ordinarily there is no sign of an opening, and for a long time he considered it completely closed. He is still troubled a little with incontinence, but reports a great improvement in that respect also. His virile powers are as good as ever they were."

Case III. A. M. æt., 25, carriage maker. Was admitted to the Montreal General Hospital on September 2, 1890. He was a man of regular habits; had never had venereal disease, and had no tubercular history. He had suffered for five years from frequent and painful micturition, with pus and occasionally small quantities of blood in the urine. Patient is described on admission as "pale and emaciated, but free from fever. Micturates every few minutes, and suffers from constant pain about the bladder. and at the point of the penis. Urine is acid and contains muco-pus and albumen. Left testicle is hard, swollen and adherent to the scrotum, through which a couple of sinuses discharge each a drop or two of sero-pus. The swelling of the testicle, which has been very gradual, began about three years ago. Heart and lungs normal." A perineal cystotomy was performed on the 9th September (1890) and a large soft rubber catheter tied into the wound. This operation afforded little or no relief and on September 23d the catheter was removed. On the 1st of October the patient first came under my care. The perineal wound was then nearly closed, and the symptoms and general conditions were about as described in the above extract from the case book. The patient's sufferings were severe and continuous, so that he could not sleep. After a month of observation and local treatment I opened the bladder above the pubes (November 1, 1890) and explored it carefully by the aid of the

electric lamp. The trigone and a band of about an inch in depth around the urethral orifice were the seat of many superficial ulcers, varying in size from that of a split pea to irregular patches as large as a five cent piece. The mucous membrane of the whole fundus of the bladder was also studded with small tubercles which had not advanced to the stage of ulceration, nor indeed even to the length of showing signs of caseation. The ulcerated patches were scraped and cauterized, but the little non-ulcerated tubercles were left untouched. They were so numerous that it would have been impossible to deal with each one singly. A large tube was left in the wound and the symptoms were for the time almost entirely relieved. The patient's general health improved as well as all the symptoms except that the urine still contained pus. On account of the extensive tubercular deposit in the mucous membrane of the bladder (which had not been treated at the operation) and the tubercular testicle, the patient was submitted to the tuberculin treatment from December 26, 1890 till about February 1, 1891. The fever "reaction" was very marked after each injection, but the local signs were less definite except that there was a steady and gradual increase in the amount of pus discharged with the urine, and the patient's general health deteriorated rapidly, although the bladder irritation (frequent and painful micturition) never returned. On February 19th, the testicle was removed and pronounced by the hospital pathologist to be typically tubercular. From this operation he recovered without a bad symptom, although the general health did not improve. The temperature remained high, and there was at times profuse sweating. There was great emaciation and the urine was loaded with pus. In this condition I left him on the 14th March, never expecting to see him again.

On my return from Europe in July I enquired about him, but could find no trace of him other than the following note in the case book dated March 25th: "Patient became discouraged and went home." In September he came to report himself as much improved and hopeful. He has continued to improve without any further treatment steadily ever since and to-day April 18, 1892, he reports himself in good health and spirits, and is working every day at carpenter work. He has no pain nor irritation about the bladder. He can retain his urine from one to two hours, but has little power to control the bladder function, and at times the urine escapes involuntarily. Patient suffered in this way before his admission to hospital to such an

extent that he wore, then as now, a rubber urinal when moving about in day time, so that this condition is not dependent upon the operation. The stump of the vas deferens is thickened and as large as a large goose quill. Twice since he left the hospital a little abscess has formed and opened itself over the end of the stump, but it is now quite healed. The urine is slightly turbid from a light mucus cloud which settles on standing, but it is acid in reaction, free from pus and blood, and when tested with heat and nitric acid shows no evidence of albumen. The patient suffers from aching and lameness through the left side of the pelvis, the cause of which was not investigated. It is probably, however, associated with the tubercular vas deferens, or due to tubercular infiltration of intra-pelvic glands. Otherwise his health is good and his functions normal. The body weight of this patient before and during his illness is interesting. Prior to his illness his highest weight was 165 lbs; when admitted to hospital he weighed 125 lbs., and when he left the hospital his weight was 105 lbs. It is now 145 lbs.—more than at any time since his illness began.

The only recorded cases of this operation with which I am familiar are those of Guyon, Reverdin and Battle. (The case reported by Mr. W. H. Battle was that of a female patient, in whom both the conditions and symptoms discovered, as well as the operation differed materially from those above described.)

At the French Surgical Congress held in Paris in October, 1889, Prof. Guyon reported the results in three cases on which he had operated. The following is a brief epitome of his report:

Case I, operated upon in July, 1885, recovered and remained well. He was able to continue his work, and at the time of the report his condition from a genito-urinary point of view was completely satisfactory.

Case II, died two years and two months after operation from double pyelo-nephritis, which existed at the time of operation, and which was demonstrated at the autopsy. A fistula remained after the operation, but at the autopsy the bladder was found to be perfectly free from tubercle. No bacilli were observed in the urine after operation, although they were abundant before.

Case III, operated upon in 1888, after having suffered from bladder symptoms for nine months. The right kidney was manifestly implicated in the disease, and operation was decided upon to give relief. The chief symptoms were frequency and

pain in micturition, so severe as to render rest impossible, the patient having to urinate as often as a hundred times during the night. The operation relieved the symptoms without arresting the progress of the disease, and the patient died in about a year. At the autopsy the mucous membrane was found to be free from tubercular lesion.

The advantages of this operation are both immediate and remote. The immediate results in every case reported were the full relief of the painful and frequent attempts at micturition; the arrest of hemorrhage and in a short time the cessation of the pus discharge except in those cases where the pus came from sources other than the bladder ulceration. The remote effects have been far more satisfactory than one could have fairly expected. My three patients, as far as is known (two of them certainly), have recovered quite as completely as we ever expect tuberculous patients to recover, especially where it is impossible to extirpate the diseased organ. Of course when tuberculosis of the kidney already exists relief of bladder symptoms is all that can be looked for. This operation, moreover, is sound in principle, and is carried out exactly on the same lines as the treatment adopted by surgeons for tubercular disease of other organs, and while it may not give as brilliant results as some joint operations, for example, it would seem by effecting the removal of the diseased tissues and giving temporary rest to the organ, to offer the best, if not the only hope to many patients who are the subjects of tuberculosis of the bladder. Compared with perineal cystotomy it gives far more satisfactory rest to the bladder, inasmuch as the urine escapes through a healthy portion of the bladder wall leaving the inflamed and ulcerated region just within the neck of the bladder free from the irritation of a catheter or drainage tube.

In conclusion, I believe that this operation, which is neither difficult nor dangerous, and which brings the diseased areas directly under the eye and hand, can be relied upon to give more prompt, more complete and more lasting relief to those very distressing conditions produced by ulceration of the mucous membrane of the bladder in the immediate neighborhood of its outlet than any other method of treatment at present known to surgeons.