

Many of the stores in question were first-class establishments, with cement floors. The personnel occupied excellent quarters in the second stories. They were cleanly in their habits, and took a daily shower-bath after working hours. They were all subscribers to the same private hospital and we were immediately informed by our inspectors of every case of sickness.

Our system of inspection and reporting of all suspicious cases throughout the city was very thorough. We had the best support from the profession and we were well prepared by our past campaigns against yellow fever.

The same kind of preparation was reflected in the response of the people to our exigencies. I doubt if there ever was such activity displayed by property-owners as was shown here in Havana to render an extensive business section rat-proof. More slowly but surely we have been improving our system of household disposal of garbage by enforcing the ordinances as to the use of metallic, covered containers.

Flaws may be found here and there in the work, but its general effectiveness was exemplary. A general order was given to clear all premises of rubbish, refuse and used-up material. For many days the amount of such stuff, including street sweepings and garbage, carried out to sea in lighters, was increased from the normal daily output of 450 to 2,000 tons a day, with an average of 1,500 tons.

The orders to wash out the floors daily with phenol solutions for the destruction of fleas were cheerfully obeyed, not only in the infected district, but throughout the city. In the more exposed localities they were carried out by the disinfection brigades, whose work cannot be too highly praised.

A deratization service and rat brigades for the poisoning and trapping of rodents were created. A premium of five cents was paid for each rat. Up to September 3 we had destroyed 17,974 rats.

Of the 8,909 rats which have been examined in our laboratory, none has been found plague-infected. Kitasato has called attention to the fact that it is not rare to have summer epidemics of plague without finding plague rats. This was also in our favor. The flea population of rats is at its lowest in the tropics during the month of June. I have been cultivating the *Loemopsylla cheopis*, the common rat-flea in Havana, in my laboratory at Las Animas Hospital for several years, and I have shown the decrease of their population during the summer months.

A detailed report of the bacteriologic work in connection with these cases will be published by Dr. M. G. Lebreo, who was in charge of that part of the work. The reports of other heads of departments will be published also in *Sanidad y Beneficencia*, the official organ of the Department.

Award of Nobel Prize to a Vivisector.—What have the anti-vivisectionists, those sentimental and insatiable liars, to say of the award of the Nobel prize to Dr. Alexis Carrel, of the Rockefeller Institute? A year or so ago they were attacking Dr. Carrel with their heavy artillery, accusing him of all sorts of incredible cruelties and bringing up charwomen and elevator men as expert witnesses against him. But now he gets \$30,000 for his successful experiments in suturing blood-vessels and transplanting organs—all of which experiments were performed on animals. Can it be that the trustees of the Nobel fund are also scoundrels? Or can it be that they refuse to believe the balderdash of silly old women, male and female?—*Baltimore Evening Sun*.

THE TREATMENT OF PAPILLARY TUMORS OF THE URINARY BLADDER WITH THE 'HIGH-FREQUENCY' CURRENT (OUDIN)*

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My object in writing this paper is to call attention once more to this new method of intravesical treatment and to bring together many of the facts that surgeons working along these lines have acquired. To prepare an up-to-date report I have resorted to the old expedient of sending letters to all the surgeons who might be using this method of treatment. A large number have answered my questions and I take great pleasure in thanking them publicly.

I. EXTENSIVE USE OF THE NEW METHOD

All the answers that I received I have tabulated. Almost all the answers were enthusiastically favorable to the new method. One or two answers were favorable, but not particularly enthusiastic, as can readily be seen by consulting the tabulation. One answer was far from favorable, but in view of the fact that the surgeon in question had never used the method, I think we can pass over his remarks.

About 183 cases have been treated. These were cases of intravesical papilloma. In addition, more than twenty cases of urethral papilloma (not included in the tabulation) were treated by the surgeons. Thus their opinions are based on more than 200 cases in which they have tried this new therapy. This naturally represents more than 200 tumors, as in many cases there were multiple growths.¹ I shall not analyze the table in detail. I should like to call attention, however, to the answers to Questions 5 and 6. The unanimity of opinion that this new method is simpler and superior to previous methods is most striking and surely speaks well for the high-frequency current treatment of vesical papillomas. While over 200 cases have been treated in the United States, surgeons have begun to use the method in France, Germany and Austria. Up to date I have heard of twenty-eight cases treated in Europe (Heitz-Boyer of Marion's clinic, R. Kutner, R. Bachrach of Zuckermandl's clinic). All are enthusiastic about their results. Heitz-Boyer uses a slight modification of the original technic, which I believe is less effective. The others use the same technic as we use in America.

II. TECHNIC

In previous papers² I have described the simple process under discussion and shall not repeat the details. Certain points in the technic I would, however, like to touch on.

The electrode which is purchasable at present is not so satisfactory as the original electrode, and I have been trying to persuade the Wappler firm to have the original

* Read in the Symposium on Treatment of Tumors of the Bladder in the Section on Genito-Urinary Diseases of the American Medical Association, at the Sixty-Third Annual Session, held at Atlantic City, June, 1912.

¹ Because of lack of space this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints. A copy of the latter including the table referred to in the text will be sent by the author on receipt of a stamped addressed envelope.

² From the Mount Sinai Hospital, Genito-Urinary Surgical Service.

1. In my twenty-five cases I had to treat more than forty papillomas.

2. Beer, E.: Removal of Neoplasms of the Urinary Bladder, THE JOURNAL A. M. A., May 28, 1910, p. 1768; Die Behandlung von gutartigen Geschwülsten, etc., Centrallbl. f. Chir., 1910; Treatment of Tumors of the Urinary Bladder, etc., Ann. Surgery, 1911, N. Y. State Jour. of Med., October, 1911.

wire manufactured again. This was firmer and of smaller caliber than the present output. It was very durable. Some of it I am still using, fully three years having elapsed since it was made. I have the impression that copper wire is a more efficient electrode than steel. The extensive necrosis produced by using copper electrodes I have failed to see when using the steel electrode. Whether or not this is accidental, I cannot definitely state.

I am inclined to think that development along these lines of therapy will be in two directions. Experiment may demonstrate that other metal electrodes will be more effective than the original copper one. Experimentation with different mediums may evolve a medium which is better than distilled water. To what extent the use of the bipolar current will displace the unipolar, we must reserve final judgment. In view of the fact that the D'Arsonval current has much less cauterizing and electrolytic action than that shown by the Oudin current in experimental work on organic tissues, I doubt whether it will displace the Oudin current to any degree.

III. NATURE OF THE GAS PRODUCED DURING THE TREATMENT

According to Oudin (Heitz-Royer, Fifteenth Session of the French Urologic Association, 1912) this current produces no electrolytic phenomena. This categorical statement does not harmonize with the facts that we observe. Gas is regularly produced when contact with tissues is effected. No gas is produced when the current runs off into water. The production of this gas is evidence of electrolytically induced chemical change. As I have stated before, this gas appears to be hydrogen when produced outside of the body. I have never been able to collect it from patients during treatment. By accident, however, I happened to obtain a reaction within the patient's bladder which leads me to think that the same gas is produced in the cases under discussion. In a patient with papilloma of the anterior wall of the bladder I noticed a sharp explosion while the current was running. The explosion, which did no harm, was similar in every way to the detonation that takes place when the gas collected over a treated piece of meat in a test-tube is ignited with a match. The oxygen in the air-bubble which was close to the papilloma probably combined, under the influence of the heat engendered by the current, with the hydrogen produced by the treatment.

The observation that the copper electrode seems more effective than the steel suggests that, in addition to cauterization by heat, and in addition to the electrolytic action, there is a possible third factor underlying the phenomena that we are studying.

IV. PAPILLOMAS IN CYSTITIS

A fourth point to which I wish to call attention is the existence of a type of papillomatous growth that is very difficult to treat successfully, even though the growth is readily accessible. I refer to those cases associated with very severe cystitis. In those the papillomas are often in part necrotic and Nature seems to be unable to throw off the more or less completely necrotic villi. Why this should be I do not know. These may be cases of pseudopapilloma or proliferative papillomatous cystitis, and until the cystitis or its cause is done away with, a cure by the high-frequency current is not obtainable. These cases I have found the most obstinate.

V. SELECTION OF CASES FOR HIGH-FREQUENCY TREATMENT

A fifth and last point that I wish to emphasize is most important, namely, the selection of cases of bladder growth that should be treated by the high-frequency current method. I am convinced, after careful trying out, that no malignant growth³ will be cured by this method. Consequently we must determine as soon as possible whether we are face to face with a benign or a malign growth. At times this is fairly easy, but usually it is very difficult. Of eighteen cases that I have been able to study microscopically, only six showed carcinoma and judging from the microscopic and clinical behavior of the other twelve, I feel certain that the reliability of the microscopic test cannot be impugned.

To obtain specimens for microscopic study I have used different methods. Often at the first examination and treatment a fair-sized piece of tumor can be burned off and removed attached to the electrode or recovered from the washings. Straining of the urine after treatment has in three cases given me pieces of adequate size to make a positive diagnosis of malignancy. In some cases one can evacuate through the cystoscopic sheath, at the first examination, large amounts of tumor tissue which suffice for microscopic study. When all these methods fail, I regularly use Young's rongeur at the second sitting and bite out a large piece which is always satisfactory for microscopic study. Recently I have determined the presence of carcinoma four times by specimens so obtained. If all these methods of obtaining tissue fail, a careful and experienced worker will be able to decide from the lack of clinical result that he is dealing with a growth that does not respond; in other words, he is dealing with a malignant growth. This delay, I am convinced, should be avoided, as early operative excision alone can cure such cases. Early diagnosis of the nature of the growth is therefore absolutely necessary.

Having put aside all the malignant cases, I believe we should try out the high-frequency current in all cases unless the tumor is inaccessible or the patient too intolerant. The size of a growth or the multiplicity of primary growths (non-recurrent) I consider no contraindication. There are, however, recurrent multiple growths in which the whole bladder wall is studded and in these no therapy short of complete cystectomy will lead to a cure. In this type of case the patient will have to decide, as the surgeon offers him but little.

In closing I would like to emphasize these points:

1. The results of operation up to date, in many hands, have been most satisfactory.
2. All cases should be studied microscopically and all malignant cases excluded from the therapy in question.

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3. The only exception I might make would be very small growths that are superficial.

Extermination of Flies in Bohemia.—The United States consul at Prague, Bohemia, reports that the common fly has been practically exterminated from Bohemia. "Screen doors to keep out flies and other insects are unknown. The buildings are all constructed of brick, stone or concrete. The docks along the river front are of granite. The pavements and sidewalks are made of granite blocks. There are no wooden sidewalks, stairways or buildings. Decayed matter is not exposed, and the streets are frequently cleaned each day. There are no open drains in the city to attract and breed flies. I can only ascribe the absence of flies to the lack of breeding-places."