

SWINBURNE (G.K.)

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GONORRHOEA.

A Preliminary Report

BY

GEO. K. SWINBURNE, M.D.

NEW YORK CITY.

Surgeon to Good Samaritan Dispensary; Instructor in Surgery, Post-Graduate Medical School.



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THE USE OF ARGONIN IN THE ACUTE STAGES OF GONORRHŒA: A PRELIMINARY REPORT.

BY GEORGE KNOWLES SWINBURNE, M. D.,

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THE introduction of a new drug for the treatment of this condition is sure to attract widespread attention and obtain extensive use, so that it will quickly take its place when it is known how much or how little can be accomplished by its employment. The usual history of such drugs is that those who first use them are apt to have more favorable results than those who follow are able to obtain. The profession is apt to look with skepticism at the multiplicity of new drugs which, with their advertising literature, find their way to the office table, and a drug, to find its place, must fight its way or be consigned to oblivion, too often its only useful destination.

In some ways Argonin promises to be an ideal preparation for the treatment of this condition. The first extensive study of its properties and use may be found in the excellent paper by Jadassohn in the *Archiv für Dermatologie und Syphilis*, 1895, page 179. This drug is a combination of silver with casein, and is a white powder, which, carefully heated with water over a water bath, forms an opalescent, viscid, albuminous fluid. The maximum strength of this solution is ten per cent.; the reaction is neutral. Of the powder, fifteen parts contain as much silver as one part of silver nitrate. A peculiarity of-

this compound is that the silver is not precipitated by the addition of sodium chloride, nor is the compound decomposed by contact with albuminous substances. According to Jadassohn, it possesses powerful germicidal properties; it is not irritating to the mucous membrane of the urethra even in concentrated solution, nor is it escharotic; it possesses, however, no astringent properties. From experiments carried on in his laboratory, testing its powers of penetrating tissues, Jadassohn found it rather inferior to either the nitrate of silver or argentamine.

As the cases in which it was used by Jadassohn were either in the chronic stage or in the later acute stages, I resolve to try it as thoroughly as possible in the very earliest periods of the disease. It was not until the middle of March that this substance could be obtained in this country at all, and then only in such limited amount that extensive experimentation was out of the question. Since obtaining it I have used it in some fifty cases of acute gonorrhœa coming to me in the early stages of a first attack, and in about a dozen chronic cases which had proved rebellious to other modes of treatment. In the acute cases I have kept more or less careful notes, but the length of time that these cases have been under treatment and observation is entirely too short to form any intelligent judgment as to the ultimate value of this substance.

Desiring to use it in as many cases as possible, I was obliged to limit it to urethral injections with a simple urethral syringe. The method by urethral irrigations would mean the using of too much of the drug in a single treatment, and my supply would in consequence be rapidly exhausted; further, as this drug will probably be very expensive, its employment by irrigation in dispensary work will be necessarily very limited, valuable as that method has proved to be, unless it be found that a very weak solution by irrigation will accomplish as much as a concentrated solution by injection. Further, I was limited to single daily injections, inasmuch as it is not practicable to give the patient the solution to use himself, as we cannot be sure that it will be properly applied, and if a patient has his medicine, he will

remain away and cannot be properly supervised, so that no judgment can be formed as to the value of the drug.

I adopted, then, the following plan: The patient was examined, history taken, character of the discharge noted, a smear taken on a slide and stained, and the patient made to urinate in two glasses always; then the urethra was irrigated with a very weak (1 to 6,000) solution of permanganate of potassium; if the anterior urethra only was affected, than the anterior urethra only was irrigated; if the posterior urethra was also involved, intravesical irrigation from the meatus was practiced; then the patient was placed on the table and the anterior urethra slowly filled to distension, and the patient made to hold the lips of the meatus together for five or ten minutes. When posterior urethritis was present, I slid a small soft-rubber catheter, about 15 F., which had been cut off so that it was only seven inches in length, down past the cut-off muscle and injected two drachms of the solution into the posterior urethra, withdrew the catheter, and filled the anterior urethra. The catheter was lubricated with the solution of Argonin itself, which forms an excellent lubricant. I began cautiously with a two-per-cent. solution, gradually increasing to the full strength (ten per cent.), but after a few trials, finding that there was no inflammatory reaction and no pain caused by the solution, I used the full strength in all cases. The patients came daily, except Sunday; a smear was taken on a glass slide and stained for gonococci, generally every other day, sometimes daily, and if the discharge disappeared, the shreds in the urine were collected on a slide and stained. No internal medication was given except for the regulation of the bowels. Of course, alcoholic beverages were cut off, but no special restriction of the diet was enforced, except that the patients were advised that milk and Seltzer as a beverage was a good thing. Smoking was not prohibited.

In all the cases a rapid diminution in the discharge was noticed while they were under treatment, and in a majority of them there was noted a rapid diminution in the numbers of gonococci, and in several cases in which the presence of the gonococci was established

at the first examination these were not found in the smear taken on the third day ; but in several instances where the patient omitted treatment for a day or several days, there would be a slight increase in discharge and a reappearance or an increase in the gonococci. In some of these cases the germ would be rather persistent, sometimes increased in numbers ; but in several instances, especially where treatment had been omitted, the renewal of treatment would quickly eliminate them again.

One of the most noticeable features was the absence of any inflammatory reaction following this method of treatment ; on the contrary, the inflammation of the disease *per se* is markedly diminished from the very start ; even in the earliest stages the ardor urinæ is markedly diminished, in most cases completely so. Chordee was twice complained of, but inquiry as to what the patients understood by chordee established that they suffered from simple erections, which naturally were somewhat painful. The treatment itself caused absolutely no pain in any case, and frequent inquiry as to the effect of the injection elicited the answer that "there was a little burning for a while, but that was all."

In one case treatment was changed to irrigation with hot permanganate solution because the patient imagined that the Argonin gave him a headache and requested to have it omitted. In his case, a boy seventeen years old, it is to be noted that he had been irrigated for a few days before the Argonin was begun, and that shortly after the Argonin was begun his headaches came on in the afternoon, two or three hours after, and this symptom was not complained of after the Argonin was omitted. There may have been something in this, for several of the cases suffered for several days from persistent headache, sufficiently to call for medicinal treatment for this condition, which seemed to be associated with persistent constipation. Whether this was in any way due to the Argonin I am not prepared to say, but the constipation was unusually difficult to overcome, and I find I have prescribed more laxatives than I am ordinarily in the habit of doing. I found the fluid extract of cascara to work well in the majority of

cases. Outside of this there were no unpleasant effects which I have to ascribe to the drug. It, however, does stain the linen or clothes and the hands as badly as does the nitrate of silver, but care in this direction will obviate this, and cyanide of potassium readily removes stains from the fingers and finger nails and clothing.

The cases selected for the treatment were taken from a very large number, and with two exceptions only those coming with their first attack were selected, and of these, only those presenting acute symptoms and coming within the first two weeks of their attack were so treated. There were, however, three cases presenting severe symptoms which were three weeks old.

My reasons for selecting cases coming with their first attack of gonorrhœa are—

1. Because in the great majority the urethræ of these cases react differently to irritants of any kind than do urethræ which have already passed through one or more attacks.

2. Unless we know pretty well the previous history of a urethra which has passed through a previous attack, how do we know that we are treating a new, fresh attack of gonorrhœa and not an old reawakened one? Too many have scored successes with instances of this class only to meet dismal failure with cases with their first attack, In illustration of these two facts I have careful notes on eight cases of acute gonorrhœa which came to me within forty-eight hours of the first trouble, on which I tried a method as detailed and recommended by Dr. Lyons in the Medical Record of May 4, 1895, namely, the injection of nitrate of silver in strength of four per cent. Four of these cases had never before had gonorrhœa and four had suffered from previous attacks. In the first four cases the result was prolonged treatment covering a much longer time than is usually considered necessary. One developed epididymitis, one developed stricture, one after two months' treatment left town uncured, and one left early, but not until I was satisfied the treatment was a failure. All these cases did well at first. In the other four cases there was an absolute cutting short of the process with disappearance of gonococci within

three days, as brilliant a success in each case as any of those so well pictured by Dr. Lyons; Therefore, if a drug or a method is to be really of value for this condition, we must be able to show either that by its use the average length of time is shortened, or that a patient is carried through an attack with greater comfort, less liability to complications, and less liability to chronicity than by other methods in use. And I believe that cases with their first attack present the best field for careful study.

Of cases coming with a first attack and treated by this method there were fifty one. In three of these, only, the presence of the gonococcus was not established, and in two cases with a second attack; eight disappeared after receiving one treatment and ten left too early in treatment to enable me to form any judgment as to the probable outcome. Leaving out the eight cases that disappeared, of the remainder there came the first day the discharge was noticed, 12; within forty-eight hours, 8; within three days, 2; within four days, 5; at end of first week, 9; in two weeks, 6; in three weeks, 3—total, 45.

Of these cases, 8 had posterior urethritis when they came, 8 developed posterior urethritis while under treatment, 13 did not develop posterior urethritis, 10 did not develop posterior urethritis, but left too soon to know what might be the final outcome; 6 have not developed posterior urethritis, but are still under observation—total, 45.

One of these cases, whose history is given below, developed epididymitis.

History of the Two Cases having had a Previous Attack.—Case 2,232 was treated by me a year ago for his first attack. He presented himself on the fourth day of the discharge, eight days after exposure; incubation, four days; purulent discharge. Smear revealed a few gonococci. Urinating in two glasses, the first was cloudy, the second clear. Received ten per cent. Argonin injection. The second day, less discharge; received ten per cent. Argonin. The third day, very slight discharge; no gonococci found; Argonin ten per cent. The fourth day, no discharge; first glass cloudy, second clear; Argonin ten per cent. The fifth day, no discharge; both glasses clear; float-

ing shred in first glass, no gonococci; Argonin, ten per cent. He came again on twelfth day; condition as on fifth day; Argonin, ten per cent. On the eighteenth day he came again; both glasses clear; no treatment. He appeared one month later; both glasses clear; prostate not examined.

Case 2467, second attack. First attack two years ago; discharge had lasted two days; incubation, five days; purulent discharge; stained; numerous gonococci; first glass cloudy, second glass clear; Argonin, ten per cent. injection. The second day, less discharge; both glasses clear, shreds in one; Argonin, ten per cent. The third day, same as yesterday; stained; gonococci present, but fewer in number; Argonin, ten per cent. The fourth day, same; Argonin, ten per cent. The fifth day, discharge reduced to a minute drop; stained; a very few gonococci found; Argonin, ten per cent. The seventh day, no discharge; shreds in first glass; both glasses clear; Argonin, ten per cent. The eighth day, same. The ninth day, very thin discharge; stained; a very few gonococci, Argonin, ten per cent. The tenth day, no discharge; same. The eleventh day, same. The thirteenth day, very slight discharge; both glasses clear, first contains shreds. The sixteenth day, omitted treatment three days; very slight discharge; a few gonococci found, Argonin, ten per cent. The seventeenth day, no discharge; both glasses clear; Argonin five per cent. The eighteenth day, slight discharge, Argonin, ten per cent. The nineteenth day, same. The twenty-first day, same; first glass slightly cloudy. The twenty-third and twenty-fourth days, same. The twenty-fifth day, no discharge; Argonin ten per cent. The twenty-seventh day, same. The twenty-eighth day, no discharge; shred in first glass, second clear. Thirtieth day, slight discharge, a few gonococci. He came on the thirty-first, thirty-second, thirty-fifth and thirty-eighth days. On that day there was no discharge; floating shred in first glass, second glass clear; has not returned.

Of the cases coming with a first attack, I give three which were remarkable:

Case 3457. First attack; discharge first noticed that morning, ex-

posure three days ago; very slight, thin discharge; stained; epithelial cells, pus cells, containing gonococci, and gonococci outside free; both glasses clear; first contained one shred, which sank; Argonin, ten per cent. The second day, no discharge; shred in first glass; Argonin, ten per cent. The third day, came without having passed the night urine; no discharge; one shred in first glass; stained; no gonococci; epithelial cells; Argonin, ten per cent. The fourth day same as yesterday. The fifth day, no discharge; patient notes watery discharge in rising in morning; urine held six hours; one shred in first glass which floated, than slowly sank; stained; contained pus, epithelial cells; no gonococci; Argonin, ten per cent. The sixth day, no discharge; urine held six hours; one floating shred in first glass; no treatment. The seventh day, same; no treatment; still under observation. This case I regard as cured at the first injection.

Case 2829. First attack; discharge has lasted twenty-four hours; exposure seven days previously; purulent discharge; stained; gonococci found present, both glasses clear; shreds in first; Argonin, five per cent. The second day, very slight discharge; stained; a very few gonococci found; both classes clear, shreds in first; Argonin ten per cent. The third day, discharge thin and watery, and very slight moisture of meatus; urine in glasses as yesterday; Argonin, ten per cent. The fourth day, no discharge; lips of meatus slightly glued; Argonin, ten per cent. The fifth day, same; moisture from meatus on slide; stained; epithelial cells; extracellular gonococci; Argonin, ten per cent. The sixth day, no discharge; shred in first glass, second clear; Argonin, ten per cent. The eighth day same; Argonin ten per cent. The ninth day, stained; epithelial cells only; Argonin, ten per cent. The tenth day, stained, same as ninth day. The eleventh day, lips glued; one floating shred in one glass; both glasses clear; Argonin, ten per cent. The twelfth day, up late last night; watery discharge; stained; epithelial cells; no gonococci; Argonin, ten per cent. The fifteenth, sixteenth and seventeenth days no discharge; shred in first glass; stained; epithelial cells; no gonococci; Argonin, ten per cent. The nineteenth day, long bicycle ride yesterday; slight watery

discharge; stained; no gonococci; no epithelial cells; first glass, floating shred, second, clear. Returned on twenty-sixth day; had been drinking, and had coitus twice; no discharge; both glasses clear a faint floating shred in first glass. This case, I believe, was cured by third injection.

Case 2405. First attack; discharge had existed six days; incubation, seven days; purulent discharge; stained; but slide was misplaced, and therefore unfortunately not stained; first glass cloudy, second clear; Argonin, ten per cent. The second day, less discharge; stained; pus cells; no gonococci could be found after a careful search; first glass slightly cloudy, second clear; Argonin, ten per cent. The third day, no discharge; first glass cloudy, second clear; Argonin, ten per cent. The fourth day, no discharge; both glasses clear, floating shred in first glass; Argonin, ten per cent. The fifth and sixth days, same; returned on tenth, eleventh and twelfth days, same; returned on eighteenth day, there was a slight discharge; had emission the night before, stained; no gonococci found. The nineteenth-twentieth and twenty-first days, no discharge; both glasses clear floating shred in first; Argonin, ten per cent. Seen on twenty-eighth day, condition same; no treatment. In this case it is a pity the first staining was lost; the probability is, however, that it was a case of simple, non-specific urethritis, in spite of the long period of incubation, about which I made carefully inquiry.

Case 1805. First attack; discharge twenty-four hours; incubation, ten days; purulent discharge; stained; epithelial cells, pus cells, gonococci, intracellular but not numerous; Argonin, two and half per cent. The second day, very slight discharge; Argonin five per cent. The third day, very slight discharge; both glasses clear; Argonin, ten per cent. The fourth day, no discharge; both clear, Argonin, ten per cent. The fifth day, same. The seventh day same. The eighth day, same. The fourteenth day, both clear; no discharge; Argonin, ten per cent. The fifteenth day, same. The eighteenth day, same. Returned on twenty-fifth day with discharge; his brother, who brought him to me, told me that he had not been behaving

properly, but had repeatedly indulged in coitus. I refused to give Argonin any longer; patient became irregular, coming once or twice a week; the discharge, always slight, persisted, and posterior urethritis came on; was severe for two or three days; and patient began to come more regularly, but I only irrigate him with permanganate of potassium. Is doing well, though he has several times drunk beer. As he is no longer under Argonin, the case is of no further interest, except that he was doing well and was a good illustration of the value of Argonin.

Case 2270 presents a severer type of the disease: First attack; discharge for seven days; incubation, five days. Has been treated by a doctor who gave him santal-Midi capsules in large amount; patient sick; entire penis swollen and œdematous; lips of meatus œdematous, narrowing it; purulent discharge; stained; numerous gonococci; patient in constant pain; urinates frequently, and gets up every fifteen minutes at night to urinate; the act is so painful that patient dreads it; first glass cloudy, second glass clear; irrigated anterior urethra with 1-to-6,000 hot permanganate; painful at first, but rather grateful as irrigation is persisted in; Argonin, five per cent. The entire penis is wrapped with a wet 1-to-1,000 bichloride dressing and protective tissue, and patient instructed to keep it wet. Calomel, ten grain powder with sod. bicarb., to be taken at night. The second day, œdema much less; patient more comfortable, greatly pleased; second glass clear; Argonin, five per cent., after hot 1-to-6,000 permanganate douche; wet bichloride as before. The third day, marked improvement; second glass clear; Argonin, ten per cent. The œdema disappeared completely by the fifth day; discharge steadily lessened, in fact was always slight after the fourth day. This patient continued his work, which was that of a cutter, and when he began to be better he was put to work on a patent arrangement for cutting through many thicknesses of cloth; he had to sit on a seat like a bicycle seat and work both feet and hands; the discharge continued slight; always contained a few gonococci; on the twentieth day posterior urethritis began, and ten per cent. Argonin was injected into deep urethra; discharge

ceased on twenty-second day. On the twenty-seventh day it returned; stained; no gonococci; both glasses still cloudy; gave up work because the bicycle seat was making him worse. The posterior urethritis began to diminish and ceased on the thirty-ninth day; when a day was omitted (as Sunday) a slight discharge would return, containing a very few gonococci. All symptoms have ceased for a week, but patient is still under observation; holds his urine two hours and a half; both glasses are absolutely clear.

Case 1977 a car conductor, came when discharge has lasted twenty-four hours; incubation, seven days; was followed twenty-eight days, and was apparently a perfectly uncomplicated case. Gonococci disappeared from discharge on fourth day, and he was apparently cured by nineteenth day. There was only a slight mucous discharge at times and on the eleventh day. The sixteenth day, a very few gonococci were found. Case was progressing favorably; on the twenty-sixth day, a warm day, he had changed winter underwear to summer flannels; toward night it was cooler. The twenty-seventh day came with pain and swelling in right knee. The twenty-eighth day he could just get to dispensary; was advised to go to hospital. Patient is now at Mount Sinai; has been there two or three weeks. This was evidently a case of gonorrhœal rheumatism; his gonorrhœa had apparently been cured for several days, and was keeping him under observation. After four weeks in the hospital he returned, stated that his discharge returned after he had been in the hospital three days; on his return he had no discharge, but had a subacute posterior urethritis. He was treated with deep Argonin injections (ten per cent.) for one week, and then returned to work.

Case 2518: Patient fifty-three years old, rather feeble and anæmic; the discharge (first attack) has existed forty-eight hours; incubation, four days; stained; gonococci found; first glass cloudy, second glass clear; Argonin, two and a half per cent., injected. The second day, less discharge; first glass cloudy, second clear; Argonin five per cent. The third day, a small drop of pus; stained; a very few gonococci found; first glass cloudy, second glass clear; Argonin, ten per cent.

The fourth day, still very slight discharge; patient doing well; Argonin, ten per cent. The fifth day, no discharge; second glass a trifle cloudy; Argonin, ten per cent., anteriorly: The sixth day, no discharge; second glass distinctly cloudy; Argonin, ten per cent., both anteriorly and posteriorly. The eighth day, same. The ninth day, improving; second glass less cloudy; but this condition persisted till the twenty-first day, when patient began to have epididymitis. He is married and has continued to live with his wife, which I believe accounts for his condition. He came faithfully every day; the epididymitis lasted ten days and since then has continuously improved. To-day there is a very slight nodule in left epididymis. Treatment was not omitted for a single day during attacks of epididymitis.

To day, forty days since beginning of trouble, the posterior urethritis persists, but there is no urethral discharge; treatment was changed to bladder irrigation with 1-to-3,000 silver nitrate, and the case is making a steady improvement.

Case 2333. First attack; existed seven days; posterior urethritis from beginning; profuse purulent discharge; stained; numerous gonococci; by the eighth day discharge had ceased, but posterior urethritis persisted without improvement till the fifteenth day, then cleared in three days; patient then on twenty-fifth day, a few days after treatment was discontinued, returned with posterior urethritis, marked constipation and headache, this last till the twenty-ninth day and cleared again; returned on the thirty-second day, but cleared by thirty-fifth day. To-day he is still under observation, the forty-sixth day. There has been no recurrence. In this case patient's wife came over from Russia about the thirty-second day of his trouble and he had coitus with her, which I forbade, and for this reason I am trying to keep him under observation to see what the final outcome will be.

Case 2443 presents a moderately prolonged case. He is seventeen years old, and my experience has been that gonorrhœa at this age is often severe; discharge had existed forty-eight hours; incubation,

six days; stained; gonococci found; first glass cloudy, second glass clear; Argonin, two and a half per cent. The symptoms continued mild, but persistent; at no time did he suffer inconvenience; the discharge was always very slight, but did not disappear till the twenty-eighth day, and gonococci were found present one day, after this. Posterior urethritis began on the tenth day of treatment, when the Argonin was given by deep injection; it never caused symptoms, but was simply noted by the fact that the second glass was cloudy. This cleared by the sixteenth day, but returned three days later, but was the last symptom to disappear. All symptoms disappeared by the thirtieth day. This case is still under observation.

Case 1981 presents a case which was quickly overcome, but was prolonged from a malformed double meatus; at no time was posterior urethritis present and no discomfort. Case came on fourth day of discharge; incubation, nine days; gonococci present. By the sixth day all discharge had disappeared, both glasses were clear, and there was only a floating mucous shred in the first glass; patient was then absent three days; on his return there was a slight discharge and a few gonococci found to be present, and first glass again very slightly cloudy; the next day this had completely cleared, and on the fourteenth day a very slight moisture of meatus noted; stained, and no gonococci found. On the twenty-third day, after two days' absence, there was a minute drop of pus at the meatus; stained, and a few gonococci found present. This seemed to me to be due to the fact that there was a pocket close to the meatus from which this discharge was expressed. The next day a floating mucous shred in first glass only was noted. This condition continued for several days, only to be repeated after several days' absence. Endoscopic examination of urethra showed it to be in a healthy condition, but two infected urethral follicles were found just within meatus on each side. Then from the twenty-sixth day to the forty-fifth day the case was apparently cured; on the forty-sixth day the examination of a minute watery drop revealed a few gonococci, but there was no discharge. This is the condition to-day. By the sixth day the case was apparently cured. At

no time since has there been any trouble—that is, severe symptoms; but a careful microscopic examination has revealed the presence of gonococci, which are persistent; hence a condition prevails by which an acute exacerbation may spring up at any time.

There are several cases which are somewhat like this last, in which there was rapid diminution of the discharge and gonococci, but which continued under treatment from four to six weeks. I cannot help feeling that two injections a day would be well borne, and very likely have had a good effect in these cases.

Case 3280, 3297, 3299, 3358, 3365, 3407, 3409, 3450, 3467, 3540, 3618, and 3666 are still under observation, and are all doing remarkably well. In none of these cases are there severe symptoms or signs of acute inflammatory conditions; none have developed posterior urethritis, and in none are there any signs of discharge from the time of treatment until they appear the following day for treatment, when a slight amount of discharge is found to be present, and this is after they have held their urine three to six hours, as they are taught in all cases to do, in order that the bladder may contain enough urine for purposes of examination, and in order to form an intelligent opinion as to the amount of the discharge. These cases are still under treatment, and will form a good study as to the final outcome; they all came early in the trouble and are faithful in attendance. Of these cases—

Case 3358 is typical. Came on first day of discharge; incubation, five days. All the typical signs of beginning of acute gonorrhœa; has been under treatment daily for two weeks; at no time has there been more than a thin drop of pus at meatus just before treatment, nor does there exist any discharge at any other time of the day; has had absolutely no discomfort at any time; daily examination of this pus shows the presence of gonococci. For several days has come holding the night's urine in the bladder; both glasses are clear; the first contains one or two shreds which sink slowly; in the beginning gonococci were numerous and easily found; latterly they are found only after considerable search. The last note, on thirteenth day, patient came

having held urine twelve hours; only a thin, minute, opalescent drop of pus could be noted; stained and one or two cells in the microscopic field were found, after considerable search, containing typical gonococci.

The three cases which came in the third week all had posterior urethritis and considerable purulent discharge—2936, 3328 and 3530.

Case 2936 was under treatment twenty-eight days; his case was prolonged by an abscess of the frenum, communicating with the floor of the urethra. This was destroyed by the injection of two or three drops of ninety-five per cent. carbolic. The case to-day clear, having been one week without treatment.

Case 3328 had slight posterior urethritis and considerable purulent discharge. No posterior urethritis after three days. A slight watery discharge on coming in the morning. No gonococci found after he had been under treatment one week.

Case 3530 had posterior urethritis and purulent discharge containing gonococci. On second day there was no evidence of posterior urethritis, and on third day no discharge; has remained clear for four days; still under treatment.

I have used Argonin in about a dozen cases of chronic urethritis which were rebellious to other modes of treatment, and have been impressed with the results.

My impressions regarding this drug are that it is absolutely harmless; that it shows marked power in causing the disappearance of the gonococcus; that it has peculiar power in allaying the inflammation of the disease, and I am strongly impressed by the degree of comfort that the patients possess even in the most acute stage. The only observations which I have not yet been able to make, on the account of the shortness of time the drug has been in use, is the liability of these cases to relapse, and of this a further study must be made. Naturally, if the gonococci are all removed there will be no tendency to relapse.

Jadassohn seemed to think that by the addition of 0.3 per cent.

liquor ammoniæ caustici he obtained greater power of penetration in chronic cases.

In forming a judgment of the value of the treatment in these cases it is to be borne in mind that they received only one injection a day, and none on Sunday; that as a rule they have to work hard to maintain themselves, and that many are machine operatives, probably the worst trade they could follow as regards this disease, and many lose their dinner hour in order to receive treatment.

48 *East Twenty-sixth Street.*

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August, 1896.

SPECIAL NOTE.

In dissolving **ARGONIN** in water the following precautions should be observed: Small quantities are to be introduced into a beaker, large quantities into a porcelain dish and treated with the required amount of *cold* water until all the particles become moistened. Thereupon the beaker or the dish should be heated with stirring, until complete solution results. Only a few minutes are required. Any undissolved particles are now removed by pouring the fluid through gauze, and the solution is kept in dark bottles. Ten per cent. solutions can thus readily be prepared. Argonin solutions should always be freshly prepared.

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