

Synopsis of the second hundred cases of urethral stricture, treated by electrolysis : with cases / by Robert Newman.

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Publication/Creation

Chicago, IL : The Journal, 1887.

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SYNOPSIS OF THE
SECOND HUNDRED CASES OF
URETHRAL STRICTURE,
TREATED BY ELECTROLYSIS.

WITH CASES.

BY ROBERT NEWMAN, M.D.,
OF NEW YORK.



CHICAGO:
Reprinted from THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
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SYNOPSIS OF THE SECOND HUNDRED CASES OF STRICTURE OF THE URETHRA TREATED BY ELECTROLYSIS. WITH CASES.

Read in the Section on Surgery and Anatomy, at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887,

BY ROBERT NEWMAN, M.D., OF NEW YORK.

TABULAR STATISTICS.

| No. | Patients' Initials, Residence, Date of First Visit. | Age. | Cause, Duration, Complications of Stricture. | No. of Strictures found. | Distance from Meatus, Inches. | Size of Stric., Fr. Scale. | How many Scances. | TREATMENT. | | Sequel and calibre of Urethra when Discharged. | Last Heard From. | Time of observation after Discharge. |
|-----|---|------|---|--------------------------|-------------------------------|----------------------------|-------------------|--------------------------|----------------------------|--|--|--------------------------------------|
| | | | | | | | | Average intervals, Days. | Time of | | | |
| 101 | A. R., Hartford, February, 1882. | 25 | Subacute urethritis, gleet 2 years. | 3 | 2½, 4¾, 6 | 18, 15, 6 | 6 | 10 | 10 weeks. | Endoscope used for granulations. Urethra No. 28. | Aug., '84, re-examined with No. 28; no relapse. | 2½ years. |
| 102 | A. W., New York, April, 1882. | 76 | Inflammation of urethra, bladder, hæmaturia 30 years. | 2 | 5½, 8 | Nil. | 8 | 9 | 3 months. | Improved to 25. | Not heard from. | None. |
| 103 | G. A. D., N. Y. May, 1882. | 42 | Gleet, spasm, venereal excesses 7 yrs. | 1 | 7 | 17 | 3 | 8 | 1 month. | Improved to 24. | May, '85, keeps tolerable well with ven. excesses. | 3½ years. |
| 104 | E. S., Newark, June, 1882. | 25 | Gonorrhœa, gleet 9 months. | 2 | 3½, 7 | 20 | 4 | 8 | 3½ months, inc. endoscope. | Ure. enlarged to 27. | Aug. 25, 1885, well. | 3 years. |
| 105 | S. M., Dayton, O. July 6, 1882. | 39 | Traumatism, perineal abscess, incontinence, 20 years. | 1 | 6 | Nil. | 5 | 5 | 26 days. | Enlarged to 23; has control of bladder and is content. | Sept. 25, passes 23 sound himself well. | 3 years. |
| 106 | E. T. S., Jacksonville, Fla., Aug., 1882. | 45 | Gleet, prostatitis, granulations, 5 yrs. | 2 | 3, 7½ | 15 | 2 | 4 | 2 weeks. | Improved, 23, feels well. | 1886, well. | 4 years. |
| 107 | C. S., Ogdensburg, August, 1882. | 51 | Gonorrhœa, excesses, 13 years. | 2 | 3½, 5½ | 17 | 4 | 12 | 2 months. | Is well. 28. | Reexamined, 28, Sept., 1886. | 4 years. |
| 108 | M. S., N. Y. City, Sept. 26, 1882. | 46 | Gonorrhœa, 11 yrs. | 4 | 2, 3, 4¾, 5½ | 20 | 5 | 14 | 4 months. | Well. 26. | Repeated reexaminations, 26. | 4½ years. |
| 109 | A. J. N., Scranton, Sept., 1882. | 42 | Strong injections, prostatorrhœa, 20 years. | 2 | 5, 6 | 18 | 5 | Long- | | Pleased with calibre, 25, don't care about prostate. | Well in 1884. | 2 years. |
| 110 | Dr. C. T., Augusta, Sept., 1882. | 27 | Gonorrh'a, low state of health, necrosis. | 2 | 3, 6½ | 18 | 4 | 4 | 20 days. | Is well. 26. | Reexamined, 26, April 21, 1886. | 4 years. |
| 111 | Dr. D. B., Long Island, Oct., 1882. | 59 | Gonorrhœa, 26 yrs. | 6 | 1½, 2¾, 4¾, 5, 5¾, 7 | 14, 11, 10 | 9 | Irregular. | 5 months. | Well, 28. Prostatic enl'm't in '84. Treatment again passed 28 | Was well, died of pneum., 1886. | 4 years. |
| 112 | A. M. B., Bayonne, Oct. 17, 1882. | 43 | Gonorrhœa, impotence, 15 years. | 4 | 3½, 5, 6½, 8 | 7 | 6 | 10 | 2 months. | Feels well, 23; has gained flesh and is cured of impotence. | Dr. Fields reports pat. well to 1887. | 4½ years. |
| 113 | J. O., N. Y. City, Nov., 1882. | 61 | Gonorrhœa, hæmaturia, 20 years. | 3 | 5, 6½, 8 | Guide filiform. | 5 | Irregular 1 year later. | | Was content with 23. Is blind; neglected; came under treatment again 1 year after. | Remained well until his death in 1885. | 3 years. |
| 114 | B. L., New York, Nov., 1882. | 44 | Gonorrhœa, gouty diathesis, 5 years. | 2 | 2½, 4½ | 12 | 4 | Irregular. | 6 months. | Well. 24. | Seen often to date, 1887. | 5 years. |
| 115 | S. T., New York, Nov., 1882. | 62 | Gonorrhœa, retention, 20 years. | 5 | 3¾, 4¾, 6¾, 7, 8, 9, 10. | 11 | 5 | 9 | 2 months. | Is well. 23. | Not heard from. | |
| 116 | T. H., N. Y. City, Jan., 1883. | 42 | Successive gonorrhœa, 19 years. | 2 | 4½, 7 | 11 | 8 | 20 | 6 mos. irregular. | Cured to 26. Re-examined in '84 & '85, always with No. 26. | Was well until his death in '86. | 3 years. |
| 117 | H. T. E., Vermont, Jan., 1883. | 32 | Masturbation, impotence, 4 years. | 2 | 1½, 4¾ | 17, 13 | 5 | 8 | 6 weeks. | Calib. enlarged, 28. | Not heard from. | |
| 118 | M. A., Philadelphia, Feb., 1883. | 35 | Strong injections, prolonged urethritis, 8 years. | 2 | 3¾, 5¾ | 15 | 5 | 14 | 2½ months. | Enlarged, 22; patient refused more treatment, feeling well enough. | Reexamined, Feb. 9, 1885, not the slightest contraction. | 2 years. |

| No. | Patients' Initials, Residence, Date of First Visit. | Age. | Cause, Duration, Complications of Stricture. | No. of Strictures found. | Distance from Meatus, Inches. | Size Strict., Fr. Scale. | TREATMENT. | | | Sequel and Calibre of Urethra when Discharged. | French Scale No. | Last Heard From. | Time of Observation after Discharge. |
|-----|---|------|---|--------------------------|-------------------------------|--------------------------|-------------------|---------------------------|--|--|------------------|---|--------------------------------------|
| | | | | | | | How many Séances. | Average, interval's Days. | Time of | | | | |
| 176 | G. T. P., Savannah, Dec., 1886. | 26 | Strong injections, 2 years. | 2 | 5¼, 6¼ | 9 | 9 | 15 | 3 months. | Well, 28. | | Oct., 1886, well. | 1 year. |
| 177 | T. D., N. Y. City, Jan. 22, 1886. | 56 | Strong injections, prostat. enlargem., complete retent'n, 26 years. | 3 | 3½, 6½, 7½ | 18, 0 | 18 | 11 | 6 months. | Has full power over bladder. Well, 23. | | Re-ex., 23, Mar. 1887. | 1 year. |
| 178 | W. S. M., New York, Feb. 5, 1886. | 37 | Gonorrh'a, urethrotomy, 11 years. | 3 | 3½, 5, 6½ | 18 | 5 | 10 | 1½ months. | Dilated 26. | | Not heard from. | |
| 179 | B. Y. C., New London, Feb. 4, 1886. | 35 | Urethral abscess, perineal fistulae, over-disten. bladder, 6 years. | 2 | 3½, 6½ | 0 | 2 | ½ | | To 28. (See note.) | | Re-exam. Feb. 18, 1887. | 1 year. |
| 180 | W. A. A., New London, Feb. 24, 1885. | 26 | Gleet, granular urethritis, 2 years. | 2 | 1½, 5 | 18 | 6 | 10 | Irregular 3 mos. | Enlarged to 28, almost more than the normal calibre. Well, 30. | | Feb., '87, family physician rep'ts him well. Seen him often, May, 1887. | 1 year. |
| 181 | G. T. C., N. Y. City, March 19, 1886. | 24 | Gonorrhœa, retention, 6 years. | 2 | 4, 5½ | 14 | 10 | 11 | 4 months. | Well, 30. | | May, 1887. | 1 year. |
| 182 | H. K., New York, April 9, 1886. | 42 | Gonorrhœa, traumatism, rupture urethra, 18 years. | 4 | 4, 5½, 6½, 7¼ | 8 | 11 | 9 | 4 months. | Well, 28. | | May, 1887, is in Arkansas. | 6 months. |
| 183 | Dr. O. V. G., Paterson, Apr. 11, 1886. | 50 | Gleet, gout, spasm of bladder, 26 yrs. | 4 | 2¾, 3¾, 4, 7 | 14, 12, 0 | 6 | 8 | 1½ months. | Very slow, imp'd 14. Gout and gen'l debility prevented his return. | | May, 1887, is not worse. | 1 year. |
| 184 | G. P., England, April 15, 1886. | 31 | Gonorrhœa, phynosis cong., 3 mos. | 2 | 4, 6¼ | 14, 11 | 3 | 4 | 10 days. | Imp'd to 23. Had to leave with his ship for England. | | Feb., 1887, well, and no relapse. | 10 months. |
| 185 | J. L., Duchess Co., April 30, 1886. | 29 | Gonorrhœa, syphilis, 3 years. | 2 | 2¼, 5¼ | 14 | 6 | 14 | Calls irregular 4 mos. Endosc. | Well, 28. | | Jan., '87, physician rep'ts well. | |
| 186 | G. W. T., Bergen, N. J., May 11, '86. | 22 | Gleet, orchitis, 2 yrs. | 1 | 5¼ | 18 | 6 | 7 | 1½ months. | Well, 28. | | May 20, 1887. | 1 year. |
| 187 | H. T., Brooklyn, May 19, 1886, March 13, 1887. | 21 | Strong injections, 6 months. Traumatism, tear in urethra, which bleeds. | 2 | 4, 6, 17 | 16 | 5, 6 | 8, 7 | 1½ months. | Well, 23, new gonorrhœa, very stubborn, 21. | | Still under treatment. | |
| 188 | G. T., N. Y. City, June 18, 1886. | 41 | Gonorrhœa, retention, orchitis, urethrotomy, 20 yrs. | 1 | 5 to 7 | 11, 0 | 9 | 12 | Treatment in interval of 4 mos by traveling. | Improved to 20. | | Is in So. America; when he returns tr'tm't will be resumed. | |
| 189 | D. T. H., Newark, Aug. 1, 1886. | 49 | (Never had disease.) Cicatrication, after porotomy, 3 mos. | 1 | Meatus. | 18 | 5 | 7 | 1 month. | Enlarged to 27. | | Well, Feb., 1887 | 7 months. |
| 190 | H. W. D., N. York, Sept. 17, 1886. | 19 | Gleet, 6 months. | 1 | 3½ | 17 | 3 | 4 | 12 days. | Well, 25. | | Mar., 1887, well. | 6 months. |
| 191 | G. R., New York, Oct. 1, 1886. | 33 | Strong injections, cystitis, prostatitis, 4 months. | 2 | Meatus, 2½ | 18 | 4 | 7 | 1 month. | Well, 28. | | Re-ex., 28, Jan. 9, 1887. | 3 months. |
| 192 | Dr. T. J., Pa., Oct. 18, 1886. | 31 | No record. 1 year. | 2 | 2½, 6 | 17 | 4 | 4 | 12 days. | Well, 28. | | Not heard from. | |
| 193 | A. A. S., New York, Nov., 1886. | 52 | Not certain. Pyelitis, hypospadias. | 1 | 6¼ | 25 | 2 | 15 | 15 days. | Imp'd, 30, has symptoms of pyelitis. | | | |
| 194 | W. M., Cleveland, Dec. 2, 1886. | 45 | Gonorrh'a, urethrotomy, prostatitis chron., 20 years. | 2 | 5, 6½ | 23, 20 | 3 | 3 | 7 days. | Enlarged to No. 26; went home to Cleveland. | | | |
| 195 | T. E., Norwalk, Ct., Dec. 10, 1886. | 54 | Gonorrh'a, urethrotomy, urine dribbles away, 25 yrs. | 1 | 7 | 0 | 5 | 30 | Irregular attendance. | Very much imp'd, 17, is easy and has full control of bladder. | | Discontinued treatment for cause. | |
| 196 | G. W. W., New York, Dec. 24, 1883. | 45 | Gonorrhœa, syphilis, 8 years. | 3 | 2¾, 3¾, 6¼ | 12 | 8 | 10 | 3 months. | Second stricture is calcareous & yielding very slowly, 25. | | Still under observation. | |
| 197 | F. A. C., N. Y. City, Jan. 8, 1887. | 31 | Strong injections, 5 years. | 1 | 6½ | 21 | 3 | 5 | 1½ months. | Enlarged to 32. | | Well. | |
| 198 | M. V., Brooklyn, Jan. 12, 1887. | 40 | Amateur injections, acute urethritis, 1 month. | 1 | Meatus. | 17 | 3 | 4 | 12 days. | Enlarged, 23, feels well. | | | |
| 199 | J. M. C., N. York, Feb. 16, 1887. | 26 | Gleet, granulations, 5 years. | 2 | 5, 8 | 25 | 3 | 15 | Endoscope, etc. 2 months. | Improved, 32. | | Is traveling. | |
| 200 | Dr. R. G., Jersey, Feb. 26, 1887. | 44 | Gleet, retent'n, prostatitis, granular urethritis, 2 years. | 2 | 4½, 5½ | 23 | 4 | 8 | Endoscope months. | 2 Feels well, 32. | | Still under observation. | |

Case 179. Dr. Douglas, of New London, has treated the patient by electrolysis, when no instrument would pass, and improved him so that natural course of the urethra was re-established to No. 23, and full power of his bladder.

In presenting this report of cases of urethral strictures, treated by electrolysis and a tabular statement of a second series of 100 cases, my object is to record facts from clinical experience in private practice, and by presenting a respectable number of cases, to establish reliable statistics which as a record will assist the study of the subject and fortify the successful results obtained previously. I have practised electrolysis in the treatment of urethral stricture, over 18 years, and have from time to time reported cases. Many other surgeons from different parts of the world, including countries in Asia, have substantiated the good result of such treatment, so that at present we could collect easily 1,000 cases; which record should establish the value of my method. But I am not aware that any other person besides myself has contributed to the statistics 200 cases from private practice. The difficulty consists in this, that in order to use a case for reliable statistics, the patient must (1) have given a true history and address of himself, (2) remained under treatment a certain time, (3) followed advice and attended regularly to appointments, (4) remained under observation after being dismissed, and been accessible for further information. Cases of dispensary patients, as a rule, are worthless for statistics, and even in private practice only a small percentage can be utilized for an honest record. Therefore it will be seen, that it is very difficult for one practitioner to collect 100 cases for reliable statistics.

No Relapse.—My paper of the first 100 cases was presented to this section at the meeting in 1883—and differs somewhat from this second series. One principle feature was, to show that no relapse of the malady occurred after the stricture has been cured by means of the electrolysis. As the meaning of the word "cure" may be interpreted differently by some than by others, I will be more explicit by defining my meaning, viz: no contraction of the calibre of the urethra takes place, and after the patient has been dismissed as well, to his own satisfaction, the same number of sound or catheter which was used the last time in treatment, would easily pass, after a year or even many years. When the value of electrolysis had been proven by reported cases, and even by my article of "10 years experience, etc.," some sceptics still objected, claiming that not enough time had elapsed between the treatment and the after-observation. To meet that objection I prepared the paper of "Tabular Statistics of 100 Cases of Urethral Stricture, Treated by Electrolysis without Relapse." These 100 cases were naturally not consecutive cases, but collected from consecutive cases for the purpose, and had to meet the following conditions:

(1) The patients being under treatment regularly, and for a reasonable time; (2) that they were to be discharged as cured, or at least so improved, that the patients were content with the result, and did not wish any further treatment or improvement; (3) they were to be cases that were heard of afterwards by reliable information; mostly by re-examination of the family physician or by myself. Some of these patients came repeatedly for such an re-examination.

(4) That a *reasonable* time had been allowed between the discharge when cured and the re-examination, which in these cases was resp. from 3 to 11 years.

The proof of no relapse was, that the same number of sound was used in the re-examination, which passed the last time at the close of the treatment, *i.e.*, if the calibre of the urethra was enlarged to a number 26 French, the same number 26 passed again after resp. 3 to 11 years. Some unfriendly critics jeeringly said, "it was a remarkable point in Dr. Newman's cases, that they were, every one of them, successful." But these critics overlook the fact, that in the selection of these 100 cases, the first essential point was, that they were discharged as cured; in order to see whether or not a relapse would take place. I have stated all these facts distinctly in my former paper, and those sceptical critics have overlooked the facts, and therefore have been unjust.

Selection of Cases.—The present record of the second series of 100 cases, which I have the honor to report to-day is collected in a different way. It consists of the experience of the latter few years, the narrative of almost consecutive cases taken from my note book; relating all such cases, which have remained long enough under treatment to warrant a result, and in which the necessary information has been furnished and recorded; on the other side omitting cases, which have not been long enough under treatment, or only seen without treatment, and in which the record is insufficient. In this report I have on purpose omitted the word "cured," because there is a diversity of the meaning cure. The patients were dismissed or stopped treatment themselves, when they felt comfortable and well, had a calibre of the urethra which enabled them to void freely a good large stream, and if wanted could exercise sexual intercourse.

The result of such treatment is marked under the heading "sequel and calibre of the urethra when discharged." The number of the last electrode used, is stated according to the French scale.

In recapitulating we find that:

Strictures which admitted no instrument were enlarged from No. 17 to 28 resp.
 Strictures which admitted a No. 2 instrument were enlarged to No. 23.
 Strictures which admitted a No. 6 instrument were enlarged from No. 17 to 28 resp.
 Strictures which admitted a No. 7 instrument were enlarged to No. 23.
 Strictures which admitted a No. 8 instrument were enlarged to No. 28.
 Strictures which admitted a No. 9 instrument were enlarged from No. 23 to 28 resp.
 Strictures which admitted a No. 11 instrument were enlarged from No. 26 to 28 resp.
 Strictures which admitted a No. 12 instrument were enlarged from No. 24 to 28 resp.
 Strictures which admitted a No. 13 instrument were enlarged from No. 24 to 28 resp.
 Strictures which admitted a No. 14 instrument were enlarged from No. 20 to 30 resp.
 Strictures which admitted a No. 15 instrument were enlarged from No. 22 to 28 resp.
 Strictures which admitted a No. 16 instrument were enlarged from No. 23 to 26 resp.
 Strictures which admitted a No. 17 instrument were enlarged from No. 23 to 28 resp.

Strictures which admitted a No. 18 instrument were enlarged from No. 25 to 32 resp.
 Strictures which admitted a No. 20 instrument were enlarged from No. 25 to 30 resp.
 Strictures which admitted a No. 21 instrument were enlarged from No. 25 to 32 resp.
 Strictures which admitted a No. 23 instrument were enlarged from No. 26 to 32 resp.
 Strictures which admitted a No. 25 instrument were enlarged from No. 30 to 32 resp.

The result of the enlargement of the calibre of the urethra varied according to circumstances, as necessities, wishes of the patients, time allowed for treatment, nature of the stricture, complications, general condition as occupations, vices or virtues of the patients. But results must be considered very good, even by chronic grumblers, if a calibre of a urethra can be enlarged to a No. 28 French, when at the first visit no instrument would pass, and experts have tried in vain before. In some cases the family physician has tried for weeks, in others, celebrated professors were given chances, without being able to pass any instrument, and the disposition of the cases were, the advice of perineal section. In some cases this advice by the family physician was accompanied by a written introduction to a first class operator, etc. In all such cases, when no medical hand could pass the stricture with an instrument, it was passed successfully by the power of the "electrolysis," which acted as a chemical absorbent, and not as a dilator, as some kind friends have suggested. If in these cases dilatation could have been used, why did the experts and surgeons not do it? In one case mentioned in a former paper, a surgeon whose skill in using instruments is undoubted, was unable at nine trials to pass any instrument through the stricture, which a doctor in a New Jersey village, probably not as skilled in the manipulation of instruments, succeeded with electrolysis on the very next day. All these are facts which can be verified by reliable witnesses, and there can be no doubt that the electrolysis did the work, which could not be done by pressure or dilatation.

The duration of the strictures at the time the patients presented themselves for treatment varied from 1 month to 30 years, and in recapitulating we find:

Two cases of 1 month standing; 2 cases of 3 months; 2 cases of 4 months; 4 cases of 6 months; 1 case of 9 months; 3 cases of 1 year; 10 cases of 2 years; 6 cases of 3 years; 6 cases of 4 years; 11 cases of 5 years; 6 cases of 6 years; 5 cases of 7 years; 4 cases of 8 years; 4 cases of 9 years; 4 cases of 10 years; 2 cases of 11 years; 1 case of 12 years; 2 cases of 13 years; 1 case of 14 years; 2 cases of 15 years; 1 case of 16 years; 2 cases of 18 years; 1 case of 19 years; 7 cases of 20 years; 2 cases of 21 years; 2 cases of 25 years; 2 cases of 26 years; 1 case of 30 years; 4 not known.

To make the recapitulation of the different points in these cases more interesting, we will now compare both series of 100 cases. What was the percentage of single to multiple strictures?

In the first series of 100 cases we find 42 single and 58 multiple strictures with a total of 189 strictures. In the second series of 100 cases we have only 21 single, 79 multiple, with a total of 230 strictures.

There is a striking difference between the two

series, and it seems that the average appearance is more correctly given by the first figures, so that we may expect nearly one-half of patients presenting themselves, having single strictures. The increase of multiple strictures in the report of last years, may arise from the fact, that more bad cases were transferred to me. The number of strictures in one individual we find as follows:

| | First 100. | Second 100. | Average in 200. |
|----------------------|------------|-------------|-----------------|
| 1 stricture in..... | 42 | 21 | 31½ cases. |
| 2 strictures in..... | 34 | 43 | 38½ " |
| 3 " "..... | 17 | 26 | 21½ " |
| 4 " "..... | 5 | 7 | 6 " |
| 5 " "..... | 2 | 1 | 1½ " |
| 6 " "..... | 0 | 2 | 1 case. |

The location of the strictures was found in all parts of the urethra, from the meatus to more than 8 inches from it, as follows:

| Location of Strictures in | 1st 100 Cases. | 2d 100 Cases. | Average in 200 Cases. |
|--|----------------|---------------|-----------------------|
| At the meatus or less than 1 inch from meatus..... | 8 | 9 | 8½ |
| At 1 inch or less than 2 inches from meatus..... | 12 | 12 | 12 |
| At 2 inches or less than 3 inches from meatus..... | 31 | 24 | 27 |
| At 3 inches or less than 4 inches from meatus..... | 25 | 41 | 33 |
| At 4 inches or less than 5 inches from meatus..... | 42 | 30 | 36 |
| At 5 inches or less than 6 inches from meatus..... | 37 | 46 | 41 |
| At 6 inches or less than 7 inches from meatus..... | 24 | 40 | 32 |
| At 7 inches or less than 8 inches from meatus..... | 0 | 20 | 10 |
| At 8 inches or more from meatus..... | 10 | 8 | 9 |

SITUATION.—The greatest number of strictures were from 4 to 6 inches in the first 100 cases; from 5 to 6 inches in the second 100 cases; or in the first part of the urethra. In the membranous part, 10 per cent. first 100, 20 per cent. second 100, average in 200 cases, 15 per cent. In the prostatic part, 5 per cent. first 100, 8 per cent. second 100, average in 200 cases, 6½ per cent.

This combined statistic of 200 cases confirms the observations made at the report of the first series, that strictures appear in every portion of the urethra, about 10 per cent. in the membranous, and about 5 per cent. in the prostatic portion; some of the latter were of traumatic origin. It seems to be a mistake, to believe that there are no strictures in the prostatic portion of the urethra, and that the largest number are situated within 3 inches from the meatus.

Séances, intervals and time of treatment average exactly alike in both series reported. From 1 to 10 operations, in some cases even more were necessary, from which fact one may draw the conclusion, that the average number of séances was 5 to 6 for each case. The treatment in each case averaged 2 to 3 months. Long intervals between the séances, and weak currents are rules to which I still adhere, and which I cannot impress too strongly on operators, as most important points in these operations. The intervals ought to be once a week or more, but in case of necessity may be shortened, each séance lasted from 2 to 10 minutes; I do not like to prolongate it more, except for good reasons. The electric current is from 3 to 5 milliampères of a good galvanic battery, having a steady current; which is equal to from 6 to 10 cells. Precision and measurement of

the electric current are desirable, if a good galvanometer can be procured.

Observations.—The length of time patients were under observation after treatment differs widely in the two series, for good and natural reasons. The patients recorded in the first series were under observation from $3\frac{1}{2}$ to 11 years, which is an average time to from 6 to 7 years in each case. I have shown above the object and result of such observations; and certainly it has been proven that during years after the treatment the calibre of the urethra, when once sufficiently enlarged, or cured if you please, did not suffer any contraction. This principle or effect of the electrolysis is also proven in the second series of 100 cases, but not in such a striking degree. This is most natural for several reasons. These cases were all treated lately, within a few years, some remaining still under treatment or observation, therefore the record of observation could not have been longer than a few years. Next the cases were not selected, but reported almost as consecutive cases, as found in the note book. There is no claim, that these cases were all cured, the record speaks for itself and shows how far they were improved, or a good reason why they were not more improved. Even in this series in most cases a reasonable time had elapsed for observation, and many re-examinations have shown that no contraction of the urethra had taken place. These observations comprise a time between 3 months to 5 years, the largest percentage of observations were made from 1 to 3 years. A small percentage of these cases were not heard from again, but as they all left off treatment, when the calibre of their urethras was resp. of a No. 25, 28 and 32 size French, it is presumable that they remained well, and that such was the reason of their non-appearance again.

For other information concerning electrolysis, I refer to my former paper, published in THE JOURNAL, April 25, 1885, and its continuation, "Tabular Statistics of 100 cases of Urethral Stricture Treated by Electrolysis," in the *New England Medical Monthly*, August, 1885. There will be found the definition of electrolysis, the theory, as also the action of the poles, practical experiments and demonstrations, the *modus operandi* and instruments used. The latter are still more minutely described in my article: "The Armamentarium for the Treatment of Urethral Stricture by Electrolysis, with a *résumé* of the Operation," which appeared in the *Medical Register*, Philadelphia, February 19, 1887. While these details are omitted here, in order to avoid repetitions, it may be useful to give short and practical rules for the performance of the operation, as a safe guide for practitioners who wish to adopt the treatment of electrolysis in stricture of the urethra.

Recapitulation of general rules:

1. Any good galvanic battery will do, which has small elements and is steady in its action; the twenty-cell battery, carbon and zinc elements is an excellent instrument, and particularly sufficient for the beginner.
2. The fluid for the battery ought not to be used too strong.

3. Auxiliary instruments, as galvanometer, etc., are important to the expert, but not necessary for the beginner.

4. For the positive pole a carbon electrode is used, covered with sponge, moistened with hot water, and held firmly against the cutaneous surface of the patient's hand, thigh or abdomen.

5. For the absorption of the stricture the *negative* pole must be used.

6. Electrode bougies are firm sounds insulated with a hard-baked mass of rubber. The extremity is a metal bulb, egg-shaped, which is the acting part in contact with the stricture.

7. The curve of the bougie is short; large curves are mistakes.

8. The plates must be immersed in the fluid before the electrodes are placed on the patient, and raised again after the electrodes have been removed.

9. All operations must begin and end while the battery is at zero, increasing and decreasing the current slowly and gradually by one cell at a time, avoiding any shock to the patient.

10. Before operating, the susceptibility of the patient to the electric current should be ascertained.

11. The problem is to absorb the stricture, not to cauterize, burn or destroy tissues.

12. *Weak currents at long intervals.*

13. In most cases a current of 6 cells, or from $2\frac{1}{2}$ to 5 milliampères, will do the work, but it must be regulated according to the work to be done.

14. The *séances* should be at intervals not too frequent in succession.

15. The best position for the patient to assume during the operation is that which is most comfortable for himself and the operator. I prefer the erect posture, but the recumbent or others may be used.

16. Anæsthetics I like to avoid; I want the patient conscious, so that he can tell how he feels.

17. Force should never be used; the bougie must be guided in the most gentle way; the electricity alone must be allowed to do the work. Avoid causing hæmorrhage.

18. During one *séance* two electrodes in succession should never be used.

19. All strictures are amenable to the treatment by electrolysis.

20. Pain should never be inflicted by the use of electrolysis; therefore it should not be applied when the urethra is in an acute or even sub-acute inflammatory condition.

21. The electrode should not be greased with substances which are non-conductors, and would insulate.

Objections.—In reality there can be no valid objections to the method of electrolysis in the treatment of urethral strictures, and those which have been raised from time to time come either from men entirely ignorant of the first physical laws of electricity, or from such who had a personal interest or feeling in the matter. To the latter class in the opposition belong some surgeons of high standing, who are wedded to the knife, have not tested the electrolysis, and hence are opposed to any innovation. Most of such objections are entirely unfounded.

based on false theories, or are too trivial and even ludicrous to be considered. Some have even the stamp of mis-statements purposely made. Here for instance is one, which we find in a modern text-book on surgery: "Electrolysis, as a means of cauterization and dilatation recommended recently, is painful, uncertain, and liable to be followed by peri-urethral abscesses. It possesses no compensating advantages which entitle it to any further notice." The author of this strong language of condemnation had no knowledge nor experience in any kind of electricity.

His statement is either the consequence of ignorance or made to mislead, because he ought to know, that electrolysis is not a cauterization nor a dilatation; on the contrary I have warned always against cauterization, and stated over and over again, that electrolysis is not a dilatation, but the process of decomposing a compound body by electricity, a galvanic chemical absorption. It is further false that it is painful, uncertain and liable to be followed by peri-urethral abscesses. On perusal of my rules and records, it will be found that pain should never be inflicted, and that the process gives certain positive results. During my large experience with urethral strictures, I never yet have seen a peri-urethral abscess follow the electrolysis, and all such abscesses which have come under my observation ante-dated the electrolysis. And on the other hand, how cunning (which may be accidental) is the condemnation of electrolysis worded by the great surgeon, leaving a hole to creep out. If he is taken to task for his sentence, he may say he condemns electrolysis only as a cauterization, but as a decomposing agent it is all right. Why did he not say it? I leave it to any impartial judge, if such a sentence in a text-book does not mislead the masses instead of instructing? A man who writes a text-book for instruction, ought to stand by the truth and be silent on matters he does not know.

One friend objects to the treatment because it does not always cure a prostatitis or any other discharge. Of course, it does not always, and discharges will only be cured if their existence is caused by the stricture; but if there are granulations, or other causes, our electrolytic treatment has nothing to do with it. Some are aggrieved to hear, that to succeed, it is necessary to understand electricity and the handling of the genito-urinary instruments. Now there is scarcely a profession, business, or even common labor, which can be exercised without an apprenticeship, and in any vocation expertness is needed to be useful. The same objection could be raised to any operation, or even to the practice of medicine. If operators, who are unskilled or careless fail in their undertakings, it does not condemn an acknowledged good operation. A London surgeon does not like the long intervals between *séances*, without giving any reason for it. If necessary, he may operate at shorter periods, as I have shown in the report of cases, that I have done so in intervals of 2 days. My recommendation of longer intervals is made for the convenience and pleasure of the patient, who is generally made comfortable after 1

operation, and for that reason I consider long intervals rather an advantage. One of my distinguished friends, who is most persistent in his opposition to my methods, argues as follows:

Electrolysis is heat, heat burns, burns make cicatrices, cicatrices make every stricture worse; *ergo*, electrolysis is no good. Now that gentlemen ought to know better, after having read my articles on the subject, and heard my explanations. I distinctly advise, always practice, and insist upon weak currents of from $2\frac{1}{2}$ to 5 milliamperes, so that the electrolysis acts as a chemical decomposition by absorption, which *never* burns nor destroys tissues.

If some gentlemen use too strong currents, or the positive instead of the negative pole, they make gross mistakes, must necessarily fail, destroy tissues, and ruin their patients. If professors and others have made such mistakes and failures, it is to be lamented, but does not harm the reputation of a good method, approved by acknowledged successes all over the world in a very great number of cases.

In England very good results have been reported similar to my own. And there also similar objections have been raised, particularly at the discussion of the Royal Medical and Chirurgical Society, when Drs. W. E. Steavenson and W. Bruce Clark read a paper on the subject. To their good results of electrolysis it was objected, that their cases were of too recent a date, and their number of cases have not reached such dimensions as to place it on record as accomplished facts. These gentlemen of high standing in the profession known as experts in electricity who have done excellent good work, were then treated exactly as I was, when I had practiced the electrolysis only a comparatively short time. But, when my 100 cases were alluded to, in which no relapse occurred after an observation and re-examination from $3\frac{1}{2}$ to 11 years, the objection then was, that such statistics were too good. I have spoken of these 100 cases before, and also shown, that electrolysis is not a dilatation; on the contrary, that when dilatation and even pressure will not pass a stricture, the electrolysis will by its chemical action.

Why was it advisable to use gradually larger and larger electrodes? This is a question by a gentleman, who wants thereby to prove that the enlargement of the calibre was done by pressure. The answer is, that the electricity can do only a certain work in a certain time, and that it would be impossible to subject the patient to such increased work, and to such prolonged time in one *séance*, without doing great harm. You may ask just as well, why do you eat 3 meals a day, and why don't you eat once a week, by taking 21 meals at once. It is considered a good result to enlarge the calibre of the urethra by 3 sizes in one *séance*, and when such 3 size larger sound can not be pressed through a stricture, but yields to the action of electrolysis, while no pressure is used, it is the best proof that the electrolysis did such work and not a dilatation. This I have often demonstrated. Besides, how can the intelligent interrogator expect that a stricture which will only admit a No. 9 sound, can be taken grip at by a large bulb like No. 28? Such a large

bulb acting as the negative pole could only enter the healthy part of the urethra with its tip, act there on healthy tissue, which would do more harm, and do no good to improve the diseased part. No, we want a size for the electrode, which with its tip reaches the beginning of the stricture, engages itself therein, and enlarges by means of its chemical action the calibre by degrees until it is large enough, that the electrode will pass such stricture, making it 3 sizes greater than before the operation. According to the nature of the stricture, a 2 to 4 sizes larger electrode, French scale, may be used for one *séance*, and such must be considered a very good result. Another eminent gentleman finds fault, that no endoscope has been used, and that American writers have not given enough details with regard to the size, nature and position of the stricture. He also described 1 case of his own as a failure. No wonder he failed, because he in reality practiced electropuncture and not electrolysis, and a contraction naturally followed. Neither are his objections justified, as I have in my tabular statistics, as well as in other reports of cases, always stated details, as patients' first visit, cause, duration, complication, nature, number, size and seat of stricture, etc. I also have used the endoscope for 20 years, and made use of it in the treatment of strictures, when it was indicated, to gain further information. I have still to hear of a valid real objection—but on the contrary can state decided advantages of the electrolysis, without wishing to enter into the merits of other methods.

THE ADVANTAGES OF ELECTROLYSIS:

1. Electrolysis is applicable to all strictures in any part of the urethra.
2. Electrolysis will pass and enlarge any stricture, when other instruments or the skill of surgeons fail, which I have often demonstrated.
3. It causes no pain or inconvenience.
4. It is devoid of danger.
5. It is not followed by hæmorrhage, fever, or any other unpleasant consequences.
6. It relieves at once.
7. The patient is not detained from attending his daily work or business, and can earn his living while under treatment without restraint.
8. No relapse takes place.

The previous statistics, showing certain points, do not give the history, details and progress of the treatment, which are necessary for a thorough understanding. To supply this want I will conclude with a record of cases, partly condensed and partly *in extenso*. While space does not permit details of all the 100 cases, typical cases will be given to represent groups.

Group I.—Strictures complicated with urethral granulations or ulcers; use of the endoscope. No. 104. E. S., Newark, N. J., æt. 25 years. Stricture of urethra; granular urethritis. June 26, 1882. Has had gonorrhœa once, 3 years ago. Was cured of it in 2 months. Noticed a stricture 8 months ago. A gleet discharge commenced a few months before the stricture was noticed. At present the stream is

small, corkscrewed and of less power than formerly. Examination with *bougie à boule* finds the walls of the urethra thickened by hypertrophy; there is no increased sensitiveness. There are two strictures, respectively $3\frac{1}{2}$ and 7 inches from the meatus. The size of the strictures was No. 20.

June 30. Endoscope shows a large granulation at $6\frac{1}{4}$ inches from the meatus, which spot was touched with a solution of nitrate of silver. A few spots in front are of little importance.

July 8. Endoscope. A weaker solution of nitrate of silver was applied to different places, where granulations and indurations were seen. The parts are improved.

July 14. Iodoform was applied through the endoscope.

July 17. Electrolysis. Electrode No. 34 French, bulb egg-shaped. Current of 5 milliampères was used for 5 minutes. The electrode passed the strictures easily.

July 27. Endoscope used, and affected parts painted with a brush with a weak solution of nitrate of silver.

July 31. Endoscope. Mucous lining red and congested. At $6\frac{1}{4}$ in. a few spots covered with pus are touched with the solution.

August 7. Endoscope shows improvement, mucous lining has a more natural color, is not congested, and granulations have disappeared.

August 31, Oct. 10, and Nov. 14. Electrolysis was used so that a No. 27 French passed very easily. Has been under observation 3 years, and was reexamined August 25, 1885.

No. 129.—Stricture; Granular Urethritis; Endoscope.—H. A. R., æt. 52, N. Y., widower. When 20 years old had a urethritis, which was not thoroughly cured. 14 years ago stricture was noticed and treated by gradual dilation. At present complains of gleet discharges, soreness in the urethra and a diminished stream on micturition. Sometimes has spermatorrhœa with stools. Bowels are regular and general condition is good.

Sept. 19, 1883. Examination with the *bougie à boule* revealed three strictures at 1, 3 and 5 inches from meatus, which a No. 14 French would pass. The walls of the urethra are thickened and sore on touch. The urethra is very sensitive, and bleeds at a touch. The electrolytic treatment was preceded by mild injections and the use of Mitchell's gelatine urethral bougies, to mitigate the sensitiveness.

Oct. 4. Electrolysis with a No. 17 French, egg-shaped bulb. Negative pole to stricture, which passed all strictures in 6 minutes; 4 milliampères were used, 11 gelatine bougies have been used, and urethra is no longer sensitive.

Oct. 10. Electrolysis. No 20 French passed easily through all the strictures; there is still some soreness.

Oct. 20. Electrolysis; No. 21 passed easily.

Oct. 29. Endoscope showed an engorged state of the mucous lining throughout the urethra, and granulations. Mitchell's urethral bougies continued.

Nov. 5. Endoscope, large tube (easy), showed improvement; granulations treated locally through the endoscope.

Nov. 12. Electrolysis with No. 23 French, 11 minutes, $3\frac{1}{2}$ milliamperes.

Dec. 3. Electrolysis, No. 22 French, easy, 8 minutes, 3 milliamperes.

Jan. 5, 1884. Endoscope. Granulations at $5\frac{1}{2}$ in. from the meatus were touched with the solution.

Jan. 10. Endoscopic applications were repeated.

Jan. 18. A No. 26 French steel sound passed easily by its own weight, while a current of $2\frac{1}{2}$ milliamperes was used, and did not cause the slightest irritation. Two years afterwards reexamined; found healthy and without any relapse.

No. 180.—W. A. A., æt. 26, New London. Had gonorrhœa 3 years ago; was treated by too strong injections. Subsequently a stricture was observed and treated by gradual dilation, then by electrolysis. Next went to Dr. Nelson, of New London, who kindly referred the patient to me.

Feb. 24, 1886. Examination. Active inflammation has continued with constant discharge, and profuse bleeding on the slightest touch. Painful erections during the night. At $1\frac{1}{2}$ in. was a slight stricture; at $4\frac{1}{2}$ in. a denuded surface, bleeding on touch, and at 5 in. was another stricture which a No. 20 French will not pass. Weak injections are recommended, and later Mitchell's urethral bougies.

During the month of April electrolysis was used, and gradually the calibre of the urethra was enlarged from No. 18 to No. 28 in 4 sésances.

May 14. Electrolysis with a No. 28, which was almost too large to enter the normal meatus.

May 30. Endoscope showed a denuded surface of the mucous lining at $4\frac{1}{2}$ in., where it was treated by local applications.

June. Well. One year's observation, when his family physician reported him well.

Group II.—Complications with retention, spasm of the bladder, prostatic residue, and over-distension of bladder. No. 167. Dr. G. S. M., æt. 49, widower, Conn. For a number of years has suffered from gleet, chronic prostatitis and cystitis; has had constant irritation and frequent micturition. There is a discharge from the urethra, and for the last 8 years has suffered from a stricture.

Sept. 17, 1885. The stricture is at $2\frac{1}{2}$ in. from the meatus; the walls of the urethra are indurated, giving a paper like touch in transmitting the instrument. There are spasms of the bladder and sensitiveness, particularly in the prostatic region. The stricture scarcely admits a No. 20 bougie. Electrolysis with a No. 23 French, acorn bulb, straight electrode, 3 milliamperes, 7 minutes, passed the stricture easily.

Sept. 27. Electrolysis, No. 25 French, acorn bulb, straight. This No. 25 is as large as the meatus will admit. The prostate is improved, there is still a little discharge, but the stricture appears to be cured.

Oct. 11 and 25. Two more sésances of electrolysis with Nos. 25 and 26 respectively. The meatus was rather contracted, and had to be stretched to admit the instrument, but it was done with patience, time, and without porotomy. The urethra was capacious and the electrode passed easily.

Jan., 1886. Patient was married last December, and writes that he is perfectly well; prostate is not sensitive, has diminished in size, and there is no trouble since his marriage. Remains well after one year's observation.

No. 169.—Prostatitis. Multiple and Impassable Strictures. Retention and Spasm.—J. B. S., æt. 50, New York City, married. Has been troubled with strictures for 6 years; has been treated by dilatation, once urethrotomy was performed; all without relief. Has no urethral discharge, but catarrh of the bladder with violent contraction; at times retention. The stream is very small, most of the time the urine dribbles away by overflow of an over-distended bladder. About 20 years ago had a series of attacks of gonorrhœa; after one there was continuous discharge for 1 year. For the last 3 weeks his family physician has tried daily to introduce instruments into his urethra, sometimes manipulating for 2 hours at a time. At last was unable to pass any instrument; offered patient an introduction to a surgeon, saying perineal section was the only means of relief. In this state patient came to me, Oct. 30, 1885, in great agony, with spasm of the bladder and complete retention.

On examination with *bougie à boule* found strictures everywhere throughout the urethra; there were 6 distinct strictures from $1\frac{1}{2}$ to 8 in. from meatus. Up to 5 in. a No. 17 French could be introduced, but beyond that, the strictures were impassable. Another complication was an enlarged prostate, which pressed at the neck of the bladder against the urethra and prevented the outlet of urine.

Electrolysis with the combination electrode catheter. It was very difficult to introduce any instrument into his irritable urethra, which had been wounded by former injudicious manipulations, and bled at touch. However, I succeeded with a filiform guide, which passed into the bladder. An electrode combination catheter, No. 29 French, tunnelled at the end, was then passed over the guide by electrolysis. In 12 minutes the electrode had passed all strictures and entered the bladder. An electric current of $3\frac{1}{2}$ milliamperes was used. The guide was withdrawn, as well as the silver stiletto, and a quart of urine drawn off. The spasm of the bladder ceased, and patient felt comfortable at once.

Nov. 1. Has micturated in a small stream voluntarily about every 3 hours; has no pain, soreness is less.

Nov. 2. Came to the office nervous and in distress, with spasm of the bladder, fearing another attack of retention. The lower strictures are very tight, and will scarcely admit a filiform guide, which is frequently arrested by the lacunæ. The whole urethra is tender and sore from former injudicious catheterization by the family physician. Electrolysis. Tunnelled electrode, No. 11 French, egg-shaped, over a filiform guide; 3 milliamperes for 15 minutes passed all strictures with difficulty. The treatment by electrolysis was continued for $3\frac{1}{2}$ months, in which, altogether, 9 sésances were held, and the strictures enlarged from 0 to No. 25 French. It was difficult to manage the case, as the cystitis, enlarged prostate and mutilated urethra made complications

which needed extra care and separate treatment, at the same time. The cicatrix left from the former urethrotomy was more difficult of absorption than any other of the other ordinary strictures. Hæmorrhagic points of the urethra and the enlarged prostate were successfully treated with galvano-cautery. At this time the patient felt so well that he neglected treatment and made a trip South while he was not considered cured, and was warned not to neglect treatment.

March, 1887. During a year's absence patient has felt well, and not suffered at all; and appears now from fear of a relapse. Examination showed that some places in the urethra were sore, bleeding at touch, and liable to contract. As patient had not been dismissed as cured, such condition was anticipated. For several months he was treated again by electrolysis and galvano-cautery; is so much improved that a sound No. 25 passed easily into the bladder. He is considered well, but remains under observation.

No. 177.—Stricture; Enlarged Prostate; Cystitis; Retention.—T. D., æt. 56, N. Y., married. Jan. 22, 1886, was sent to me by Dr. C. S. Wood. Has had stricture for 26 years. In 1860 a doctor caused him agonizing pains by using a strong injection, which appears to be the cause of his stricture. Has been treated by dilatation off and on. Of late has had spasm of the bladder and distension, so that he could not void urine voluntarily. The urine dribbled away by overflow and most of the time he had to use a catheter. The stricture closed up more and more till he could neither pass a catheter or void urine. On examination three strictures were found at $3\frac{1}{2}$, $6\frac{1}{2}$ and $7\frac{1}{2}$ in. respectively, from the meatus. The last two were impassable. With difficulty a filiform guide was introduced. Electrolysis, No. 9 French, tunnelled, with catheter combination over guide passed all strictures.

Jan. 27. Electrolysis was repeated with a No. 11 French tunnelled over a filiform guide (5 milliamperes 10 minutes). In the evening came to the house in distress, with retention, was not able to pass water. A syphon arrangement was made and urine drawn off drop by drop. In this manner $1\frac{1}{2}$ pints of muddy urine evacuated, which was putrid and loaded with pus.

Jan. 28. At 10 A.M. had not been able to pass any water. The bladder had been distended to such an extent that it had lost its contractile power. A small catheter was passed, and assisting with syphon at intervals, during $1\frac{1}{2}$ hours 53 ounces of urine were emptied from the bladder. This urine was thick, putrid with solid masses of disorganized stinking pus. At 6 P.M. bladder will not act; flexible catheter will not pass. A small silver catheter was introduced on a guide and 24 ounces of water drawn off, which had a better color, was clearer and contained little pus.

Jan. 29. Faradization of bladder, after which he could pass water. While a guide was in the urethra 20 ounces passed. Bladder washed out, the urine is improved.

Jan. 30. Micturition voluntarily.

Feb. 1. Electrolysis No. 14 French, egg-shaped,

tunnelled over guide, 4 milliamperes 7 minutes. Feb. 3. Bladder washed out and dilated.

Feb. 5. Electrolysis No. 17 French, egg-shaped bulb, tunnelled over guide, after which he passed a better stream. The treatment by electrolysis and washing out the bladder was continued in the same manner till July. Then a No. 23 French sound passed easily into the bladder and patient felt well, having regained full power of his bladder. After 1 year patient is entirely well, and objects to further treatment as he is perfectly satisfied with his present condition.

Group III. Strictures caused by traumatism; some accompanied by perineal fistula. No. 140. Dr. W. T., æt. 39, New York, April 1, 1884. Has had urethritis, and a stricture of 9 years standing. By an accident, a ragged instrument cut the urethra in the prostatic portion, partly in the neck of the bladder. This was not healed and a constant source of annoyance, causing hæmorrhage at intervals, particularly on passing an instrument. Part of this cut has cicatrized and caused the stricture, the other part remaining as a granulating ulcer. Electrolysis was used by an excellent practitioner, who failed because he used too strong a current, and handled the instruments carelessly. Examination revealed unevenness caused by the traumatism on the lower side of the urethra, in its depending portion, left side. Electrolysis was used with a No. 25 French egg-shaped bulb, negative pole against the stricture, 5 milliamperes for 12 minutes, with decidedly good result. During 6 months of very irregular attendance 10 sésances were held with electrolysis. The electrode gradually enlarging until a No. 32 French passed easily into the bladder without causing any pain or hæmorrhage. No. 30 would have been large enough, but No. 32 was used at the special wish of the patient.

1887. The patient has remained well.

No. 179.—Stricture; Perineal fistula.—B. U. H., æt. 35, New London, married. Had a stricture for last 6 years, occasioned by an accident to the perineum. A urethral abscess behind the scrotum appeared, which in time broke and established three separate fistulae, through which matter and urine passed. Had been treated by different physicians. Urethrotomy had been used without benefit. The strictures grew smaller, so that voluntary micturition was difficult and retention prevailed. The bladder was distended and the urine dribbled away from overflow. The constant dribbling of urine and discharge from fistulous openings made it necessary to wear a urinal. Patient failed in every way, and was not able to attend to any business. Then he applied to Dr. A. W. Nelson, a well known, conscientious surgeon of New London, who referred him to my friend Dr. A. T. Douglas, of the same place, to be treated by electrolysis.

Jan., 1886. From this time the patient was treated by Dr. Douglas and myself. There were two distinct strictures at $3\frac{1}{2}$ and $6\frac{1}{2}$ in. respectively, from the meatus, one of which was so small that no instrument would pass. The urethra was irritable, the walls indurated, the fistulae in the perineum running,

and the perineum itself changed to an unrecognizable mass of infiltrated tissues. Dr. Douglas succeeded very well with the electrolytic treatment and enlarged the strictures in a few sésances.

Feb. 4. I operated in New London with electrolysis in the presence of Drs. Douglas, Nelson, Bramman and Stanton. The strictures were passed with a No. 25 French, egg-shaped bulb. Soon afterwards the patient felt well and passed voluntarily a good stream of urine.

Feb. 9. Dr. Douglas wrote to me: "H. was here about half an hour ago, and says he has never passed his water so freely as he did Friday and Saturday." Subsequent applications of electrolysis made him a healthy urethra of No. 28 size. The fistulæ all healed spontaneously as soon as the strictures were enlarged.

Feb. 18, 1887. A reëxamination showed that no contractions had taken place. A No. 28 passed easily into the bladder and the patient has enjoyed perfect health and attended to his business.

No. 183.—*Four Strictures; Traumatism; Rupture of the Urethra.*—H. K., æt. 42, married, New York City. Has had strictures for 18 years, caused by former urethritis and accidents. Has also suffered from cystitis; received a kick in the perineum by an accident. Once he used a sound so forcibly that he ruptured the urethra. Has been treated off and on, mostly by gradual dilatation, without much benefit. He can tolerate the use of instruments well.

April 9, 1886. Examination. *Bougie à boule* meets slight indurations and thickenings of the walls of the urethra, and is arrested at $5\frac{1}{2}$ in. Sound No. 12 will not pass this stricture. A filiform guide passes easily into the bladder, over which a tunnelled sound No. 9 ran tightly. There were four strictures at 4, $5\frac{1}{4}$, $6\frac{1}{4}$, and $7\frac{1}{4}$ in. from the meatus.

April 15. Electrolysis; filiform guide, over which a tunnelled electrode No. 11 French, egg-shaped was used, 4 milliampères for 8 minutes. It passed through all strictures; the hard ring stricture at $6\frac{1}{2}$ in. was overcome by slow manipulations and lowering the curve of the instrument. Dr. Lawson was present.

For 4 months the electrolysis was continued in sésances of about 9 days' intervals. The sizes of the electrodes were gradually increased each sésance in the following order: No. 14, 27, 18, 20, 23, 25, to 28. Patient was well and at last accounts, was, in 1887, in Arkansas.

In all cases which were complicated with perineal fistulæ, it is a fact that they healed without any special treatment as soon as the strictures were enlarged and a urethral canal established.

Group IV. Strictures impassable.—This group has, in a measure, been anticipated, as it is complication concomitant with other troubles in former cases. A stricture is called impassable when the smallest regular instrument cannot be introduced through the obstruction of the urethra. In these cases the urine may dribble away, and a filiform guide may be introduced.

No. 138.—This is a case belonging partly to the last group, as it was of traumatic origin, besides being impassable. A. N., æt. 48, New York City, has had

a stricture for 41 years, occasioned when a boy 7 years old by falling from a hay loft astraddle on an oat bin. The strictures were multiplied by urethritis contracted in later life.

March, 1884. Came under my observation. The urethral canal was so small that the *bougie à boule* or any other regular instrument would not pass further than $2\frac{1}{2}$ in. from the meatus. After some manipulations a filiform guide entered. Electrolysis with a No. 9 French, conical end, tunnelled electrode was used over the guide. A current of 5 milliampères for 9 minutes was successful, and passed two strictures and the spasm into the bladder. There were two strictures at $2\frac{1}{2}$ and 3 in. respectively from the meatus.

After two more successful sésances of electrolysis a No. 14 French passed the strictures, when the patient disappeared.

Sept. 5, 1886. Nearly $2\frac{1}{2}$ years later the patient reappears, with the following story. While he was perfectly satisfied with the progress made by electrolysis, he was persuaded to have a cutting operation. He submitted to urethrotomy. Six weeks after a sound No. 30 French passed easily, and he was declared cured. 1 year afterwards an eminent surgeon had to make an official report, and he found that the patient had two tight strictures at $2\frac{1}{2}$ and 3 in. from the meatus, proving that urethrotomy had been a decided failure, and the gentleman lost his position in consequence. Since then, the strictures have contracted more and the patient comes to-day frightened and begging for electrolysis again. The strictures were found to be contracted to about No. 18 French, and the cicatrices caused by the after-effects of the cutting, so tough that they were calcareous, and yielded very slowly to absorption. The electric sésances were recommenced in intervals, and the calibre of the urethra gradually enlarged to a No. 28 French, size. The patient is now well.

May, 1887, was reëxamined with a No. 28, which proves that no relapse has taken place.

No. 168.—*Impassable Stricture; Retention.*—P. E., æt. 38, New York City, widower. Oct. 11, 1885. Has had gonorrhœa in former years. The stricture was marked two years ago, when the stream became gradually smaller and made micturition very troublesome. At present he cannot pass water at all, and is relieved only by dribblings from the overflow of a distended bladder. No bougie will pass the urethra and the patient is in great distress, having positive retention. A filiform guide made its way with the greatest difficulty; there is really no urethra. Electrolysis. Positive electrode was held in the palm of his hand; the negative pole, a tunnelled electrode with a conical end, No. 9 French size, was passed over the filiform guide, and advanced very slowly but steadily, and finally passed into the bladder. The urine was drawn off; 4 milliampères were used for 6 minutes. In this case it was impossible to state the number of strictures as the whole urethra was a mass of strictures.

Oct. 25. Electrolysis. The filiform guide entered after some time spent in manipulations. No. 11 French, tunnelled, conical end was very tight, and advanced very slowly. The worst point of the stric-

ture is at $6\frac{1}{2}$ in. 10 minutes were occupied with a current of 5 milliampères.

Nov. 2. Electrolysis. No. 18 French, egg-shaped bulb, $3\frac{1}{2}$ milliampères for 11 minutes.

Nov. 10. Electrolysis. No. 18 French, egg-shaped, no guide.

Nov. 18. Electrolysis. No. 20 French, egg-shaped, no guide.

Nov. 30. Electrolysis. No. 23 French, egg-shaped, no guide.

Dec. 4. Electrolysis. No. 25 French, egg-shaped, no guide.

Nov. 1886, 1 year after, was reëxamined with a sound No. 25.

1887. Heard from, is well.

Group V.—Strictures which are complicated with constitutional diseases, as Gout, Rheumatism, Pyelitis, Syphilis, etc.—Typical cases we find in Nos. 114, 126, 154 and 185 of our statistics. It is scarcely necessary to give these cases in detail. The point is to call attention to the fact, that such diseases aggravate the strictures to the degree of acute inflammation. These inflammations must be subdued before electrolysis is used. Such intercurrent diseases must be treated according to their nature and indications.

Group VI.—Regular cases of Stricture, (single or multiple.)—These are typical cases as they occur most frequently, and appear oftenest before the general practitioner. One case will suffice to show, as a general rule, the treatment.

Case No. 148.—J. W., æt. 32, married, New York city. July 28, 1884. Twelve years ago contracted venereal; had urethritis, chancroids and bubo; the latter was lanced. Two years ago had another urethritis, which ran into gleet, and is still present. Every morning the meatus sticks together with a film, which when broken, lets out two drops which are almost transparent white and sticky. The stream of water has grown smaller, and is now very thin, twisted and without force. Since last year the testicles are swollen.

Examination.—Testicles hang down low, simulating a degree of degeneration, of tuberculosis. Meatus

is small. *Bougie à boule* meets with indurated walls throughout the urethra; the touch transmitted by the instrument is like parchment, and in a few spots cartilaginous. The course of the urethra is tortuous. Four strictures are found, in the following places: 1st. stricture is near the meatus; 2d. stricture is 4 inches from the meatus; 3d. stricture is 5 inches from the meatus; 4th. stricture is $6\frac{1}{4}$ inches from the meatus.

August 3. A filiform guide met with obstacles everywhere, but was finally introduced into the bladder. *Electrolysis.* Positive sponge electrode is held by patient and pressed in the palm of his hand. The negative pole is a No. 14 French electrode, egg-shaped bulb, tunnelled, to run over the guide in the urethra. The current applied was 4 milliampères for 5 minutes. The electrode passed slowly through all the strictures into the bladder. Patient is weak, run down constitutionally and nervous.

August 4. Feels better, has voided urine easier.

August 10. Electrolysis, over guide with tunnelled electrode No. 17 French, egg-shaped bulb; $4\frac{1}{2}$ milliampères, 11 minutes, passed easily through all strictures. While the instrument was in the bladder, some spasm took place.

August 17. Electrolysis, No. 17 French, egg-shaped, without a guide advanced easily.

August 24. Electrolysis, No. 20 French, passed all strictures: 5 milliampères, 6 minutes.

August 31. Meatus is very small, so that it will not admit of a larger size than No. 20.

Sept. 21. Electrolysis. The meatus is enlarged by an electrical stretcher, which worked so well that a No. 28 could be introduced.

Sept. 28 and Oct. 5. The electrolysis with the meatus stretcher was repeated.

Oct. 12. He is better in every way. Has no gleety discharge. Bougie cannot detect any stricture. Is well.

Oct., 1885. Reëxamined with a No. 28. No relapse. Well.

68 West 36th St., New York.

The first of the four main principles of the Standard of the 1914 is that of the "right of the individual to the maximum of freedom of action consistent with the rights of others." This principle is the foundation of the entire system, and it is upon it that all the other principles are built. It is the right of the individual to do as he pleases, so long as he does not infringe upon the rights of others. This is the principle of liberty, and it is the principle upon which the Standard of the 1914 is based.

The second principle is that of the "right of the individual to the maximum of freedom of thought." This principle is the foundation of the entire system, and it is upon it that all the other principles are built. It is the right of the individual to think as he pleases, so long as he does not infringe upon the rights of others. This is the principle of liberty, and it is the principle upon which the Standard of the 1914 is based.

The third principle is that of the "right of the individual to the maximum of freedom of expression." This principle is the foundation of the entire system, and it is upon it that all the other principles are built. It is the right of the individual to express his thoughts as he pleases, so long as he does not infringe upon the rights of others. This is the principle of liberty, and it is the principle upon which the Standard of the 1914 is based.

The fourth principle is that of the "right of the individual to the maximum of freedom of association." This principle is the foundation of the entire system, and it is upon it that all the other principles are built. It is the right of the individual to associate with whom he pleases, so long as he does not infringe upon the rights of others. This is the principle of liberty, and it is the principle upon which the Standard of the 1914 is based.