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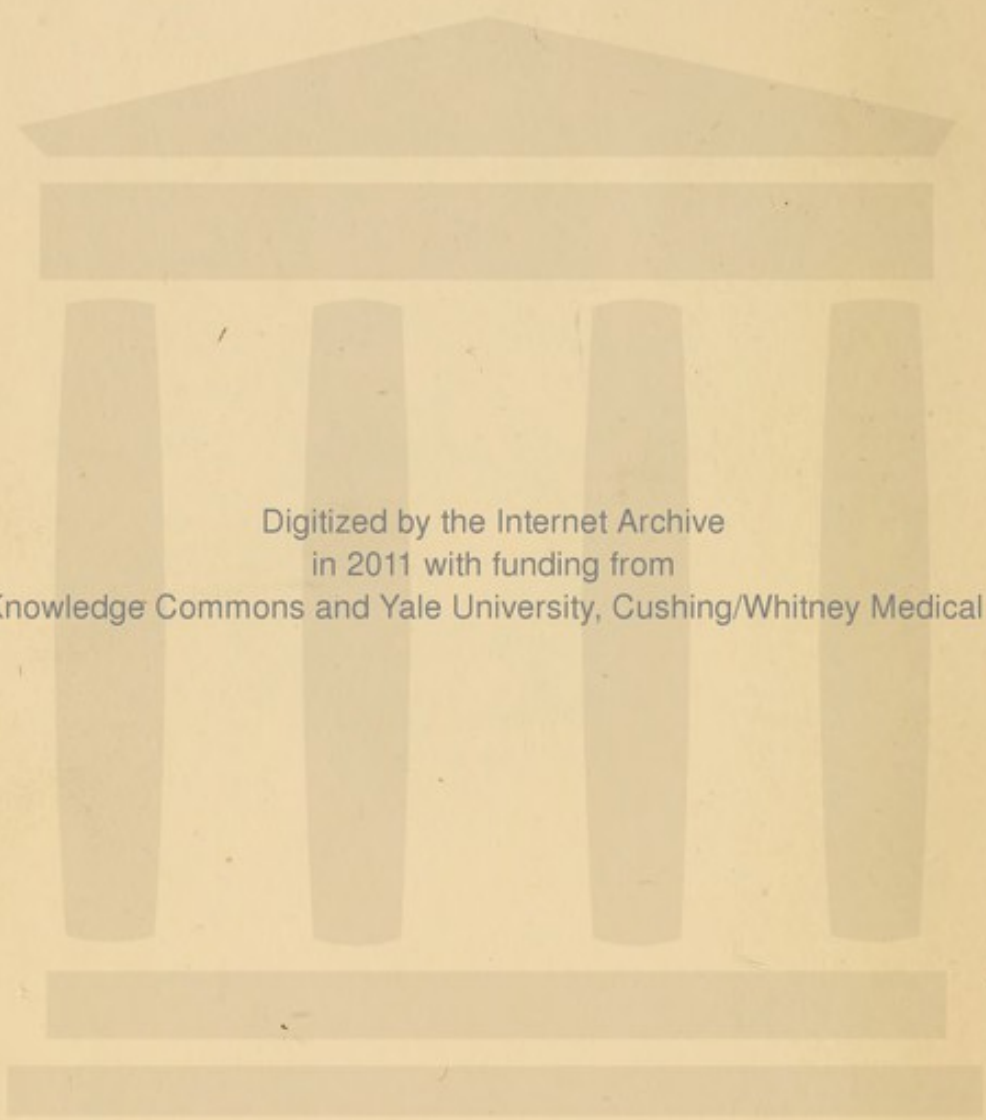

ON THE

PATHOLOGY AND TREATMENT

OF

GONORRHŒA

BY

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FIFTH EDITION

NEW YORK
WILLIAM WOOD & COMPANY
56 & 58 LAFAYETTE PLACE
1884

TROW'S
PRINTING AND BOOKBINDING COMPANY,
NEW YORK.

PREFACE.

The following work contains, in an abridged form, the substance of the earlier editions; the papers on scalding, chordee, and gonorrhœa printed in the *Medical Times;* those on the treatment of gonorrhœa published in the *Medical Circular*, and several papers read before the Medical Society of London and the North London and Western Medical Societies.

The sections on the treatment of gleet, on gonorrhœa in the female, on orchitis, and on gonorrhœal rheumatism, have been revised and amplified. Those on gonorrhœal affections of the heart and pericardium, the peritoneum and pleura, dura mater and sheath of the spinal cord; on gonorrhœal pyæmia, pyelitis, etc., are now added for the first time.

With the view of reducing the bulk of the work, many of the cases given in the first edition have been omitted, and those which are retained have been selected chiefly as examples absolutely necessary to show the power of certain remedies, or because they illustrate peculiar forms of the disorder which have been rather overlooked. It was indispensable to retain these in a work intended, not for a class book, but as one of reference for the busy practitioner. The same reasons which induced me to leave out superfluous cases, make it incumbent to dispense with all description of symptoms.

It is not to be expected that the adverse judgment passed upon many remedies, which have been at one time or other so strongly advocated, will prove acceptable to those who recommended them to public favor. But for this there is no help. Experience compels me

to say that they have not fulfilled the expectations which the first accounts of them were calculated to raise.

Whether the attempt now made to prove that gonorrhœa may, when admitting of removal, be cured without the use of the so-called specifics, is based on sufficient grounds or not, it would ill become me to say. This much, however, I can vouch for; the doctrines I have ventured to lay down have been pretty severely tested. Nothing has been recommended by myself in this work but what has stood the brunt, not merely of experience, for that I rate rather low, but of special observation. My aim was, as far as possible, *to separate clearly what might be looked on as established from what was doubtful, and not merely to prove every assertion, but to place it on such a basis that it could not be disproved.* How far I have succeeded I leave to the decision of my readers. For the remedies advised, or the views upheld, by other authors, I do not hold myself answerable. I considered my task was to select what seemed most likely to improve treatment, and only hope I have executed it in a satisfactory way.

That such a work was needed is proved by its steadily increasing sale among the profession; that the mode of examining the therapeutic action of remedies, adopted in it from the very first, was sound, is shown by so many authors having testified to the accuracy of the results obtained, as also by the British Medical Association having appointed a committee to carry out the same method, but, with all deference be it said, in a much less exact and complete shape.

18 Suffolk Street, Pall Mall,
London, S. W., and
Sion House, King's Road, S.W.,
November, 1883.

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ON GONORRHŒA.

CHAPTER I.

HISTORY.

That gonorrhœa existed from a very early period is probable enough, but much of what has been written respecting the question is unreliable and conjectural in the highest degree. Mr. Berkeley Hill, quoting from Dabry, says [1] that it was described 4,500 years ago in the collection of medical treatises made by the emperor Ho-Ang-Ti. I have not been able to obtain access to the work Mr. Hill quotes from, but I always heard that he was extremely painstaking, and I see nothing improbable in the statement. If, however, the Chinese writer's description of gonorrhœa be so full and accurate that we can unequivocally recognize the disease, it is not merely the earliest, but the only unimpeachable, account to be found for at least thirty-six centuries after.

M. Chabalier traces the descent of gonorrhœa from the time of Moses downward, in a memoir [2] perhaps never yet surpassed for elegance and scholarship; but while I cheerfully accord to it all praise on this head, I must contend that his desire to carry his point sometimes gets the upper hand of his judgment. The cause could scarcely have been taken up by a more able advocate, but even in his hands it is one of the weakest ever yet argued for.

He begins with the often-cited passage from Leviticus, about a person with a running issue out of his flesh. He maintains that this must be gonorrhœa, although in the very next verse we are told that such a person is equally unclean, whether his flesh run with or be stopped from his issue; as if any human being could identify a complaint described in such terms, which so far as we can understand them at all, might just as easily mean an ulcer of the leg with or without proud flesh in it. The fact is that men speak very confidently about diseases, *e.g.*, syphilis, lepra, elephantiasis Græcorum and furunculus, being portrayed in the writings of

[1] Syphilis and Local Contagious Diseases, p. 6. 1868.

[2] Thèse pour le Doctorat en Médecine. 1860.

Moses; but in reality any description found there, of any one of these diseases, would at once break down if confronted with the simplest definition of the complaint ever yet given, and all the more certainly when we recollect how doubtful we must ever feel about the nature of much of the translation from the Hebrew writ.

M. Chabalier's next contention is that Hippocrates described five kinds of leucorrhœa, irrespective of those arising from inflammation of the womb. But a description of five and fifty would bring us no nearer the mark unless it showed that one of these was a purulent inflammation of the vagina and urethra derived from intercourse, and in its turn conveying infection to the male; and I presume M. Chabalier will admit that this is one of the things which we do not find in Hippocrates. As to the quotation from Herodotus next brought forward by M. Chabalier, about the Scythians being afflicted with a running from the penis, I must, for reasons given elsewhere,[1] affirm that there is not the least justification for such a rendering of the passage, which clearly refers to a visible and hereditary complaint. If M. Chabalier will bring forward the name of any commentator or lexicographer, who has thus translated in print the Greek adjective used by Herodotus, I will at once admit that he may be right; till then I must contend that he is entirely wrong. The meaning of the term is hidden in impenetrable obscurity, and though it was used for ages after, only the vaguest of ideas was attached to it. But for one fatal objection I should feel inclined to take part with Astruc, who, quoting from Hippocrates, says these Scythians were simply eunuchs who dressed like women and did woman's work. The objection is that the complaint was considered to be hereditary, and that in no age or country did eunuchs ever do anything of the kind.

After Herodotus comes Celsus, who is ushered forth as describing gonorrhœa and orchitis. No better authority than that of the famous old Roman surgeon need be asked for, if we only felt sure that we are dealing with attested facts. But the truth is that Celsus never does anything of the kind. He describes primary sores, balanitis and phimosis, but as to gonorrhœa, there is, in the whole of his work, not merely no definition, but not one unequivocal symptom of it, and the orchitis he mentions was most probably hydrocele. Certainly it was not gonorrhœal, for he speaks of it as arising without inflammation, a very unlikely account for so great an observer as Celsus to give of an affection which bears all the visible marks of this state. Besides, if Celsus had been at all acquainted with gonorrhœal orchitis, he would have referred it to its proper cause; the connection between the inflammation of the urethra and that of the testicle is so direct and so palpable, that I question whether any one ever yet made a mistake as to what gonorrhœal orchitis was due to. The same may be

[1] A History of Syphilis, p. 2. 1879.

said of at least two or three antecedent symptoms. Among many gonorrhœa patients some will be sure to have the disease in a severe form, and I should say that the constant recurrence of thick discharge, turgescence of the penis, scalding and chordee, could not fail to rivet the attention of the most superficial observers.

In every community yet discovered, where the inhabitants were found to be capable of distinguishing the right hand from the left and daylight from darkness, it has been observed, I believe without a single instance to the contrary, that if gonorrhœa had settled among them, it enjoyed not merely a local habitation but a name also. For this, among many other reasons, I believe that gonorrhœa was totally unknown to the Romans. Even supposing, what seems to me incredible, that it had by chance escaped the observation of Celsus, the entire absence of all mention of it, in the works of Horace, Juvenal, and Persius is, in my opinion, sufficient to establish the position I have taken up. I consider it as certain that, had gonorrhœa existed at all in Rome at their time, they would have known of the fact; and most improbable that, had they been acquainted with the disease, they would have failed to notice it. They were not likely to be restrained by any scruples of delicacy from touching upon such a question, for no set of men ever exercised less reticence in dealing with these topics than the Roman satirists; Juvenal in particular was certainly outspoken enough, and might be said to write professedly about such matters.

For much the same reasons too I must entirely reject the evidence of Cicero, whom M. Chabalier arrays in his cause on the strength of a passage to the effect, that those who are incontinent suffer from dysuria, a term which seems to have meant indifferently stricture and strangury. But the passage, if it can be considered to prove anything at all, shows that Cicero was totally unacquainted with gonorrhœa. Strangury is by no means a constant sequela of this affection, and not unfrequently attacks persons who have never been affected at all. Even in the incontinent, gonorrhœa is not in any way a necessary medium. I presume M. Chabalier is aware that the first Napoleon suffered rather severely from strangury during the Russian camgaign, and was at all times incontinent enough; yet there is no evidence that he ever laid the foundation for the strangury by catching a gonorrhœa. Lastly, I must express my conviction that Cicero was not at all likely to have been so familiar with a disease, unknown to Juvenal and Celsus, as to make his opinion of any weight. Indeed I ought perhaps to say that the words quoted seem to me as destitute of anything like a definite meaning, or a basis of truthful observation, as a passage in Pliny or Rhazes generally is.

M. Chabalier next quotes the very doubtful authority of John Mésue, a Syriac or Persian writer, whose era, to begin upon, is so uncertain that biographers differ as to the date of his death by six or seven and twenty

years;[1] while there is good reason to believe that his works are a forgery, an utter, and in one respect a clumsy, imposture, Rhazes, who lived a century later, being quoted.[2] But though as a question of history such evidence is worthless, it yet goes to show that, at the time of the imposture or interpolation being perpetrated, gonorrhœa was in existence, as we are told that the patients suffered, among other symptoms, from itching or tickling at the orifice of the urethra and painful erections. If, therefore, we could fix the date of the writing, the passage quoted from would constitute a valuable landmark, but I cannot see in the least how this is to be done.

M. Chabalier then proceeds to deal with the testimony of Haly Abbas, who lived in 980, and who speaks of obstruction of the meatus produced by a sufficiently large quantity of viscous humor which glues it together; of the urine burning and of micturition being difficult, symptoms which almost certainly point to gonorrhœa and to it only. But indeed the time when this disease was to appear indisputably on the scene in the shape of the Syknesse of Brennynge, and to be a source of shame and torment to man; when the first absolutely reliable landmark in its history, the recognition of its contagious character and propagation by sexual intercourse, was established and acted upon, though far off, still drew near. After Haly Abbas comes Rhazes, the Persian, who however in strict order of time should have preceded him, having died in 932 at the age of eighty. From him M. Chabalier has contrived to extract the information, that he mentions the case of one Machumet, a patient, of whom he predicted that he would have a gonorrhœa because he had seen a few drops of pus precede the urine. The result is creditable to M. Chabalier's industry; but by what strange chance an author, who spent the first forty years of his life in the study of music, philology, and philosophy, and who during some part of the remainder, for he went blind, wrote at such a rate that he left two hundred and twenty-six works behind him; who took to physic in comparatively old age, and could never have gained his knowledge at the source best worth notice, the strict and patient watching of disease; who borrowed what was good in his writings from the Greek writers and heaped a perfect Pelion upon Ossa of verbiage on the top of it, ever got at an original idea at all, is more than I can make out.

After this the disease is traced through a long succession of authors. Thus Avicenna describes internal ulcers of the penis with itching of this organ, due to the effusion of acute matter into it; Alsaharavius says we may prognosticate ulcers of the penis and bladder when there exists a discharge of putrefied pus. But that Avicenna ascribes a contagious quality to this discharge, I should have to pass by his testimony, while that given

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[1] Dictionnaire Historique, tome iii., p. 284. Par H. F. J. Eloy. 1778.

[2] The History of Physick, Part II., p. 38. By J. Friend, M.D. 1726.

by Alsaharavius is of the weakest nature. The strictures which Albucasem recommends should be treated with leaden sounds were not improbably of gonorrhœal origin, and Constantine the African, who flourished toward the end of the eleventh century, may mean the same thing when he recommends soothing measures for the contraction produced by a purulent running. Gariopontus of Salernum (eleventh century) describes blennorrhagic cystitis, but the evidence is anything but conclusive; the symptoms are more severe than those ever seen in neglected gonorrhœa, and they are not traced to such a source. Tortula, a century later, speaks of balanitis; evidence which I think we may reject as weak. Rogerius describes a disease marked by heat, pricking pains, and burning, with redness and inflammation of the penis; almost certainly gonorrhœa. This author seems also to have been acquainted with orchitis. M. Chabalier says, that John of Gaddesden (beginning of fourteenth century) describes blenorrhagia and recommends a suspensory bandage for orchitis, the latter piece of evidence being, I suppose, decisive. John of Concorreggio, he says, describes orchitis, and John Arcalanus gonorrhœal cystitis and running, recognized by issue of blood or sanies, or both, with pricking or biting pains. Guy de Chauliac prescribes injections when heat and foul discharge (fœtiditas) show themselves on account of connection with an infected woman; also fairly decisive evidence. John of Arden (toward close of fourteenth century) counsels injections against internal burning and excoriation of the male yard. Andrew Boord, 1546, and whose account is here accordingly rather a chronological mistake, speaks of the contagious nature of the complaint; and lastly M. Chabalier cites the evidence of Bernard Gordon, which he had better have left out, the testimony being of anything but a convincing nature; the utmost we can extract being that among the affections of the penis he ranks pain, swelling, and itching.

Thus far M. Chabalier. There are, however, authors who go a long way beyond him, and if we were guided by what they say, we might safely conclude that the genealogy of gonorrhœa can be as clearly traced through a long chain of written evidence as the house of Guelph or Este could. There is, however, really no warrant for any such conclusion. True, a host of writers can be selected from the works of Gruner, Hensler, Astruc, and Luisinius, who speak of gonorrhœa, and those who consider such evidence as decisive can easily make out a case for an almost unbroken history of the disease from a very early date down to quite a recent period. But this is far from the true state of the question. Undoubtedly these writers treat of gonorrhœa, but under that name they not only comprehend, but some of them exclusively describe, seminal emissions and their results. What we now term spermatorrhœa was the parent disease, of which gonorrhœa was, by the few who really noticed it, considered to be a variety. From the time of Galen and Pliny downward we find occasionally depicted a form of seminal flux which was considered infectious, and so far as

such evidence can be supposed to be worth anything at all, it helps to prove the antiquity of the disease. But every now and then every trace even of this, and indeed of every symptom of gonorrhœa, disappears, and we are face to face with a picture in which we find only some form of spermatorrhœa, not one symptom of the other, not a tittle of evidence that the author had ever seen a case of gonorrhœa, or had appreciated the nature of the complaint.

This occasional mysterious silence is easy to trace when we turn to the mediæval writers, and pursue the thread of history up to the epoch of syphilis; and I think M. Chabalier himself would be rather puzzled to find in some of their descriptions anything like a picture of gonorrhœa. For instance Constantine of Carthage is often quoted as familiar with this affection, and the following is the account given by the African physician. "Owing," he says, "to deficient power of that retention which is natural to the vessels containing the semen, this passes away involuntarily, without desire for connection and without pleasure; the act takes place without erection or orgasm of the seminal vessels." Comment upon such a description is quite superfluous, for it cannot be held to apply in any way to urethritis. Arnold of Villanuova and Hugh Bencius seem to have stood in exactly the same position as Constantine, that is to say they were acquainted with spermatorrhœa; beyond this their knowledge did not go. There is ample ground to think that this was the case with the great majority of the writers mentioned by Hensler as speaking of gonorrhœa, and certainly those, whose words he does quote, describe in every instance an affection identical in nature with that described by Constantine. I should be inclined to limit the number of those we can suppose to have been acquainted with blennorrhagia, strictly to those who speak of the contagious nature of gonorrhœa, or who, like the writer of Mésue's works, give us such symptoms as itching of the meatus, scalding, and painful erections; all reference whatever to writers who simply use the word gonorrhœa, without such evidence being extracted from their works as will satisfy us that under that term they understood what we now understand, being rigorously excluded.

This materially shortens the task in hand, for the others are easily dealt with. If to the evidence taken from the reliable authors quoted by M. Chabalier, we add that possibly Pliny and Galen were in some degree acquainted with gonorrhœa, as the idea that the semen, in certain states of deterioration, acquires a poisonous quality may be traced back to them;[1] that Avicenna describes a form of gonorrhœa of that day marked by mordication, painful erection, and scalding;[2] and that Valescus of Tarentum, one of the first authors who for ages wrote only from experience, knew gonorrhœa, but evidently considered it a form of emissions, we have, con-

[1] Hensler's Geschichte der Lustseuche, S. 190. [2] Ibid., p. 178.

centrated in the few foregoing lines, all the lore of gonorrhœa scattered through fourteen centuries. I see no reason to think that we can track its history through an uninterrupted descent down to the epoch of syphilis. On the contrary the account of it constantly breaks off as abruptly as any old fragment of a nursery tale ; the disease vanishes, if not from human at least from medical ken, and complete obscurity envelopes the scene for long periods together. Hensler at once admits this. Too honest to wrest evidence to his purpose, he confesses himself unable to understand how it happens that the outline of the disease is at one time expanded to its normal dimensions, at another contracted to such narrow limits, and again at another lost in impenetrable darkness. Between the latter part of the twelfth century and the era of syphilis there flourished eight men who stand prominently forward as speaking with some degree of authority on these subjects. They are Michael Scott, William of Salicetus, Lanfranc of Milan, Peter d'Argelatta, Valescus of Tarentum, John Ardern, John of Gaddesden, and Bernard Gordon. The four first seem to have been totally ignorant of gonorrhœa ; I see no evidence in the quotations from their writings that they had ever suspected its existence. The fifth, as already mentioned, describes nothing more or less than spermatorrhœa, and the evidence of Gordon is too weak to be relied on.

With the arrival of what is generally known as the first invasion of syphilis, gonorrhœa disappears from the scene with a suddenness and completeness calculated to surprise us, when we consider how widely, comparatively speaking, knowledge was now diffused by means of printing. Benedetti seems, according to Hensler, to have been acquainted with the disease, that is to say he was most probably acquainted with the seminal discharge, and had heard, like so many more, of the name. From the same author we learn that faint traces of a knowledge of gonorrhœa are to be found in Marcellus, Grünbeck, Steber ; but such dim and scanty memorials are valueless for the reason already urged, that unless an author's definition is given, we never know whether we are dealing with the gonorrhœa of modern days or not. Indeed this was then so unknown or overlooked, that Hensler says that, during what he calls the first period of syphilis, the epoch of its imagined malignity, he can scarcely find a trace of the name and none of the disease itself ; and it is to be remembered that the name embraced every discharge from the urethra.

With the arrival of the second period, that of the decline in syphilis from its first intolerable fury, gonorrhœa resumes its place in nosology, being now, 1504 or 5, described by James Cataneus in a work which Hensler and Astruc agree in praising as the best of its kind that had ever yet appeared on these subjects. Cataneus indeed was greatly in advance of all previous writers, especially as regards the contagious nature of the affection ; he had evidently studied Nature quite as much as he had Galen and Avicenna, and he studied her better than they did, for he penetrated

farther into her secrets. He not only speaks of gonorrhœa being contagious, but says that it may arise without the infecting person having an ulcer. He even taught[1] that a woman, who had cohabited with an affected man, might, while herself healthy, convey the disease ; the first clear, unequivocal announcement, I believe, of its contagious qualities before the days of Paracelsus. Benedetti seems to have been familiar with the name, but I have not been able to make out whether he was acquainted with the disease itself.

Another turn of the kaleidoscope of Time and the disease again vanishes. Hensler finds mention of it in the Trias Romana, date unknown, but earlier than is usually supposed, 1542, as Ulrich von Hutten was acquainted with the book. From what little can be made out, it is not improbable that blennorrhagia is really alluded to, but I do not see how anything like certainty can be arrived at, the passage quoted being simply to the effect that there were then "three citizens at Rome, Simon, Judas, and the gonorrhœa people." He also reports mention of it in the works of the elder Beroaldus, 1515, in whose account however I see nothing beyond some hazy idea about what was probably premature emission, of which he certainly takes a most lugubrious view.[2] With these exceptions all is silence till Bethencourt described it in 1527, and Paracelsus in 1527 or 28, after which it once more vanishes for nearly forty years, a solitary and most doubtful notice of it by Gattinara or Gatinaria, 1539,[3] possibly excepted. Hensler quotes[4] several authors between 1532 and 1563, including Massa, whose publications range over the whole of this period, and Fracastori, whose knowledge was supposed to embrace the literature of all times, countries, and subjects, not one of whom alludes to the disease. Some writers, however, consider that venereal gonorrhœa is plainly indicated in the works of Brassavolus, 1551, Fernelius, 1555, and Fallopius about 1560.

Through all these ages of time, through all this long succession of authors, not the slightest progress had been made toward a real knowledge of the pathology of gonorrhœa. Men had been quite content to copy from one another, and the mediæval writers could not, any more than their predecessors, get beyond the idea that all varieties of gonorrhœa were only so many forms of discharge of semen ; the disease was an affection of the seminal vessels, not of the urethra at all, an error I need scarcely say still perpetuated in the name we continue to give to the disease. In this respect the pathology of Valescus of Tarentum is not a step in advance of

[1] "Quarta causa est coitus cum sana, cum qua de proximo coivit infectus, semine adhuc in matrice exsistente." Quoted in Hensler, op. citat., p. 187.

[2] Ibid., p. 171. His works were published in 1515, but Beroaldus died ten years before this.

[3] He flourished toward the close of the fifteenth century. The date given is that of the first edition of his works which I have found.

[4] Ibid., p. 197.

that laid down in the fifteenth chapter of Leviticus, although his account is one of the most complete that we have. "Gonorrhœa," he says, "is an involuntary emission of semen. The external cause of it is venereal passion for a concubine or her embraces." "But if the cause be internal its seat is in the vessels, the members, or the humors. If in the first it is because they are too hot or cold, or affected with paralysis or spasms. If in the second it is on account of a vice in the nerves or sinews. If in the third the humor is wrong, either in quantity or quality. The patient knows when he has derived it from an external source. The symptoms with reference to its internal origin are, that if it issue from the other members it takes place without erection of the penis and escapes insensibly; if it be due to spasm of the nerves it is marked by pain in the privy parts and groins. If it arise from heat it is relieved by cold things; when it comes from heat of the semen, heat and biting (mordicatio) are felt. Should it come from excess of semen then the body wastes as the semen passes sway. If due to the moistness and watery state of the semen, it soon passes away when it falls upon the clothes.

Such is the account given, not by an obscure author or low charlatan, but by a professor at Pisa, so renowned then as a cradle of letters; and I suppose the reader will agree with me, that it is difficult to imagine how ignorance, confusion, and assurance could go much farther. The author had evidently read some of the works on the subject, and had profited by them about as much as men of his generation were wont to do. It is true he was not likely to learn much from them, as most of them only repeat the same story, but if they had been capable of yielding him any solid information, I should think it would have been put to little use by a person in such a state of bewilderment as to assert that the same disease arose from the vessels being too hot and too cold, from being in a state of paralysis or spasm. Of course there was nothing either wonderful or criminal in the old writers being ignorant of the pathology of the disease. The fault lay in their not having the moral courage to say so; in palming off upon their readers and hearers as scientific teaching what was in reality a rigmarole of meagre repetitions, empty words and baseless, or rather shameless, assumption of knowledge of which they well knew they were perfectly destitute. For it would be scarcely going too far to say, that the stock of solid information possessed by a few of them about the very subjects they undertook to enlighten the world upon, was not much larger than that of the old Roman philosophers, whom Juvenal ridiculed so mercilessly, was about philosophy itself; and the statutes of Jean de Provence in 1347, and the edicts against harboring women with "the perilous Infirmitie of Brennynge," are of more value for our purpose than their opinions usually are.

But a change in the pathology of gonorrhœa, a change destined not only to endure for ages but to reach our day, was at hand. This was the

discovery that gonorrhœa was really a form of venereal disease, or to adopt the ideas and language of by-gone days, a variety of syphilis. The discovery was reserved for the eagle glance of Paracelsus, who, braggart, buffoon, and charlatan as he was, possessed almost superhuman powers of penetration, and I quite agree with Simon of Hamburg when he says, that we must stand astounded at the keenness of his view. He at once arrayed gonorrhœa among the forms of syphilis, and when we consider that this doctrine survived the experiments of Bell and Balfour; that it was upheld by such men as Hunter and his followers; and that the belief in a syphilitic gonorrhœa is not extinct in our time, we must admit that the step taken by Paracelsus, pregnant as it was with error, was yet the first ever taken in the right direction, and the greatest till we come to the days of inoculation. James Bethencourt, too, got very near the truth when he spoke of a gonorrhœa, for which he was consulted, as a discharge of "a sanious and virulent Matter," "contracted by Venery." But their teachings do not seem to have been followed up, and indeed to have on one point rather fallen into desuetude, for we find Astruc some two centuries later telling his readers, that in venereal gonorrhœa there is always a large and lasting discharge of purulent semen.

I have not been able to make out what author, after the long silence from 1532 to 1563 which Hensler speaks of, renewed the knowledge of gonorrhœa. I suppose Petronius, 1565, may claim to be the first, after which date the disease can be traced through a long succession of writers, whose number gradually increases as their date approaches our own. Prominent among these are Cæsalpinus, 1602, Martinière, 1644, Sydenham, about 1680, Musitanus, 1697, Devaux, 1711, Turner, 1717, and Cockburn, 1728. From this time all interest in its history ceases, as after that gonorrhœa figures largely in general medicine and surgery. Judging from the total silence of later writers about any opposed views, it seems a legitimate inference that whoever again attracted notice to it, adopted on other points the pathology of Paracelsus, and that by unanimous suffrage gonorrhœa remained incorporated with syphilis till the time of Cockburn, quite two centuries later. And even a century after that, the fatal teaching of Hunter, the prestige which his commanding genius imparted to everything he said, still made belief in the identity of the two diseases the ruling tenet of the day; the arguments of Cockburn and the experiments of Bell, Balfour, and Hernandez counting for nothing against his dictates. Even now, notwithstanding the luminous teaching of Ricord, belief in their identity is not entirely given up by some writers and practitioners.

Nor have I been more successful in my attempts to find out who is responsible for the long prevalent error, that gonorrhœa is a critical flow, with which art ought not to meddle too much; an error so widely spread that the profession of it, a few years ago, as an article of faith, by a physician and a surgeon, each attached to a large general hospital in London,

elicited no remark in the medical journals. I suppose, however, that those who have studied the subject, and whose opinions alone are worth consideration, are now agreed that gonorrhœa is an unmixed evil, that the discharge carries off nothing but itself, and that the more there is of it the more suffering and risk for the patient.

I have long suspected that till about the beginning of the eighteenth century gonorrhœa was rare, and only an occasional visitor in western Europe. Among other reasons I may mention the long periods of silence about it observed by writers on venereal disease in the first three quarters of the sixteenth century ; the absence of all allusion to it by the lay writers like Shakespeare who followed close upon them, and who are yet so liberal in their notice of syphilis ; the utter ignorance of the complaint displayed by the leading medical authority of the latter part of the seventeenth century, in England, Sydenham, who I should think could never have seen a case of the disease, or surely he could not have written an account of it so confused, that had it emanated from an obscure author like Martin or Profily, it would have been censured as the product of barefaced empiricism. And that the lay writers of those times were not deterred from mentioning gonorrhœa by the nature of the topic, is, I think, clearly shown by the fact that we find the pious and moral Johnson speaking of it in the plainest terms. The last reason I would urge is, that having had the opportunity of tracing this disease for many years back, in what was then a very small town in the north of England, where gonorrhœa is now rather firmly established owing to the growth of the place, I was able, by means of the books of a successive line of surgeons, kept for a long time, to make out pretty certainly that in their practice it had, till about forty years ago, only been very rarely seen and sometimes not heard of for years together. All the inquiry I could make tended to fortify this opinion ; the general experience seemed to be that gonorrhœa always died out soon after it was acquired, and did not spread, the horror of communicating it having perhaps greater weight then than now. This feeling, only too often deadened amidst the dissipation of larger places, possibly long operated as a check upon the spreading of a disease infecting only by sexual intercourse ; while syphilis, conveyed by unsuspected routes, and often by modes impossible of prevention, long gained ground with greater speed.

CHAPTER II.

PATHOLOGY.

Under the term gonorrhœa I propose to include all purulent discharges due to connection, or to the contact of infecting matter originally secreted by the mucous surfaces of the genital and urinary passages, and reproducing the same disease in another person, who can again give it to a third.

As I have seen reason to doubt some of the conclusions arrived at by certain eminent specialists in respect to the pathology of this disorder, I take the liberty of stating the grounds for dissent. To do so effectually, however, it will be necessary to go somewhat into detail. This is unavoidable where accuracy is aimed at. General statements may serve very well as the staple mode by which opinions are communicated, but they are easily met by denials of the same nature. Minuteness will not allow of this. By narrowing the subject under examination, it reduces it more to a form which admits of demonstration, and thus really shortens a discussion which, under a looser system, might become endless.

Genesis of Gonorrhœa. A. *In the Male.*—As regards gonorrhœa in the male sex, the most practical division of the affections lumped together under this name, or that of blennorrhagia, seems to be the separation of them into :—1. Cases resulting from connection with a female suffering under gonorrhœa, or gleet. 2. Those which ensue from intercourse with a woman laboring under any form of discharge not due to connection, such as leucorrhœa,[1] menstruation,[2] an unhealthy, irritable state of the vagina, malignant disease of the os or cervix uteri, simple excoriation or ulceration of these parts, uterine catarrh, or even a person in whom these organs are in a perfectly healthy state.[3] 3. Those arising from errors of diet, from drinking beer, the use of asparagus, and certain other articles of food, blows,[4] violent exercise, suc has galloping on a bare-backed horse excessive work, hard travelling,[5] erotic excitement, over-indulgence in

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[1] The Practice of Medicine, vol. i., p. 306. By Thomas Hawkes Tanner. 1869.

[2] On Urethritis and Syphilis, p. 25. By William Henry Judd. 1836.

[3] Swediaur : Practical Observations on Venereal Complaint, p. 41. 1788. Ricord : Lettres sur la Syphilis, pp. 50 and 51. 1863.

[4] Diseases of the Genito-Urinary Organs, p. 36. By Henry James Johnson. 1851.

[5] Judd : Op. citat., p. 33.

sexual pleasures, protracted attempts at connection under the influence of wine,[1] late hours,[2] direct application of irritants,[3] the presence of calculus, and finally the suppression of cutaneous eruptions; the remainder of the thirty-seven causes to which gonorrhœa is ascribed [4] being left over for the present.

Strictly speaking, the cases in the third class hardly belong to the subject in hand, as, with one or two exceptions, they are not due to connection at all, and these exceptions are not counted as instances in which contagion is communicated. But as they are often called by the same name, and as every such disorder seems to be considered by some authors a very probable cause of discharge in the other sex, they cannot well be omitted.

1. The question as to the power of the first class of agents to bring on gonorrhœa in the male sex may, I suppose, be regarded as so completely settled, that it would be wasting the reader's time to dwell on the topic. Those in the second class deserve more attention.

2. The first step is to clear them from an overlying stratum of somewhat loose assertion. It is constantly assumed as incontrovertible, that a female, having any one of the affections in this category, may communicate gonorrhœa to a man who has connection with her, a doctrine more than once of late years proclaimed as a discovery, particularly by the late Mr. Skey. With all deference to those who hold this view, I am inclined to say that the fact has in some cases been admitted on insufficient grounds; that it has been accepted without such a foregoing knowledge of the patient's history, and searching examination of the persons concerned, as could alone justify our looking upon it as irrefragably established, and that many histories of gonorrhœa thus set up are open to grave suspicion. One strong argument in support of such doubts is, that only too often an old gleet, or a disposition to it, is overlooked; irrespective of this, we frequently find that a patient who comes with very plausible reasons for having acquired a discharge in this way, afterwards changes his mind of his own accord. Still, after allowing for this source of error, cases remain which merit inquiry, and these I propose to examine.

Simple inflammation of the vulva, accompanied by purulent discharge (acute or subacute vulvitis), not of course due to connection, seems at first sight one of the most likely causes, but I have not met with a single instance of gonorrhœa thus communicated. What is more, I have seen vulvitis set up by connection take on a pretty severe form, and yet a patient, quite liable to gonorrhœa, cohabiting with a girl thus situated, has escaped. Among other cases I may give the following :—

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[1] Lancet, vol. i., p. 211. 1851.

[2] Nouveau Traité des Maladies Veneriennes, p. 61. Par le Docteur Melchior Robert. 1861.

[3] Swédiaur: Op. citat., p. 38.

[4] Nouveau Dictionnaire de Médecine, tome v., p. 131. 1866.

I was consulted in the summer of 1874, by Mr. F——, for what he called gleet. He was thin, nervous, delicate, and afflicted with a strong tendency to dyspepsia. He had suffered from gonorrhœa, followed by gleet; there was, however, now no discharge from the urethra, neither had there been any for some time. A few small shreds passed occasionally in the urine, and the canal was tender. I recommended passing a bougie once a week, and if that did not set matters right, a weak nitrate of silver injection. Some time after this he contracted an illicit connection with a girl who, for all I could make out, seemed never to have had any disease. The entrance to the vagina was narrow, and connection was difficult. It was followed by soreness of the vulva, accompanied by muco-purulent discharge; yet, though connection went on till she could bear it no longer, on account of the pain it occasioned, this gentleman had, according to his own repeated statement, no symptoms of infection; certainly when he called upon me he was free from anything of the kind. Now if these discharges really possess an infecting power equal to that of gonorrhœa, which is the only construction we can put upon the opinions expressed by many authors, how comes it that men escape under such circumstances?

About the probability of *leucorrhœa*, by which name I understand catarrhal inflammation of the vagina, being a frequent cause of gonorrhœa in the male, I confess myself somewhat incredulous. In a man who has married, as many do marry, without being thoroughly cured of a gleet, or even tenderness in parts of the urethra, leucorrhœa, especially if it take on the more serious form of inflammatory vaginitis, may light up the slumbering embers of disease. But I am disposed to think it is the connection and excitement that do this, and to rate the infecting power of leucorrhœa low even here, and still more so in the case of a healthy man, and I have seen reason to believe that men liable enough to gonorrhœa expose themselves with impunity to the contagion of leucorrhœa. I had under my care a patient who was particularly susceptible of the former complaint, yet he had connection over and over again with a girl who was scarcely ever quite free from leucorrhœa, without ever displaying a sign of contamination. I have, too, seen pretty good evidence that a man may have intercourse with a woman in the early stage of the more inflammatory form of vaginitis, a period when gonorrhœa is sometimes, if not always, highly infectious, and yet contract no disease.

Mrs. E ——, a healthy-looking woman, about thirty-six years old, consulted me, June 4, 1872, about a discharge which she said she had caught from her husband. She was suffering from rather plentiful greenish-yellow secretion, and some vulvo-vaginitis, accompanied by great heat and soreness of the parts, pain on walking or long standing, etc. She had only been married a fortnight, and was greatly distressed. On learning, however, from her, by cross-questioning, that she had no ground for suspecting her husband beyond the symptoms just mentioned, and that his conduct did

not seem to be in any way incorrect, or to have been so prior to marriage, I thought it might be wiser to defer giving any positive opinion, as possibly the affection was due merely to intercourse, which had called a morbid disposition of the parts into play, for, though healthy in appearance, she was not strong. Meanwhile, I prescribed a lead lotion and saline mixture, which soon stopped the discharge.

On March 30, 1873, she again consulted me. She had remained free from discharge till quite recently, but her health, which had improved during the summer, had begun to fail as far back as October, since which time she had suffered from dyspepsia and some degree of bronchitis, accompanied by severe cough. Latterly, the discharge had re-appeared. I inquired very carefully into the husband's case, and found that on this, as on the previous occasion, cohabitation had been kept up till her symptoms had set in. Notwithstanding this, she had observed no sign of infection in him, though she had been inquisitive enough on the point, neither had she found any farther reason to believe that he was infected at the time of marriage.

In this case, then, which is only a specimen of what I suppose most practitioners have repeatedly seen, there is good ground for thinking that the husband remained free from disease, whereas, had his wife been suffering from an affection equally as contagious as gonorrhœa, he could hardly, when taking no precautions, have exposed himself so many times to danger and have got off safe. We hear, indeed, of men who visit women of the town constantly without using any means of prevention, and still manage to steer clear of disease. Perhaps we hear a little more than the truth, or at any rate what is calculated to mislead us, seeing that, if I am to judge from what I have heard of *later experiences* of such a nature, scarcely one man escapes in the long run ; if any do, they are exceptions on which no law can be based. Many husbands must, when their wives are beginning to suffer from leucorrhœa, continually run this risk, and yet most of those so placed never have anything like true gonorrhœa.

Nor do I stand alone in my incredulity. Dr. Durkee, who has had large experience in these diseases, is as hard of belief as I am.[1] His own opinion, he says, coincides with that of Sigmund, that gonorrhœa alone produces gonorrhœa ; an opinion shared to the fullest by Bonnière and Gosselin, and almost as fully by Cullerier.[2] Auspitz, too, in a work distinctly devoted to the study of venereal contagion, says[3] that the balance of evidence is in favor of there being a specific virulence in gonorrhœa ; testimony at least equal in value to some of the frivolous anecdotes on which the non-specific theory of the disease is based.

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[1] A Treatise on Gonorrhœa and Syphilis, p. 17. 1864.

[2] Nouveau Dictionnaire de Médicine, tome v., p. 132. 1866.

[3] Die Lehre vom Syphilitischen Contagium, S. 68. 1866.

The argument that, though contagion proves the presence of a poison in gonorrhœal secretion, it still does not show that this poison is specific and incapable of being produced by simple inflammation, became a muco-purulent conjunctivitis, so strictly analogous to gonorrhœa, the inflammation originates in simple causes, and yet sets up a secretion which is contagious and can be inoculated upon a series of persons, is of very doubtful value. In the first place, in some of the cases relied on as evidence, the affection was pretty clearly not simple but strictly specific at the very outset, as much so as any epidemic. Secondly, I presume the supporters of this doctrine will scarcely maintain that chancroid is not specific, while they at the same time accept the case related by Dr. Taylor, whose great reputation is a guarantee for the accuracy of the history, as showing that chancroid may spring from a simple affection.

Dr. Bumstead quotes[1] from Dr. Fordyce Barker a brief description of a disease affecting the interior of the womb, which, while quite innocently acquired, is capable of producing purulent discharge in the male. Dr. Barker considers it to be a peculiar inflammation of the lining membrane of the uterus, under the influence of which the secretion loses its natural alkaline reaction and becomes acid and acrid, as a consequence of which it irritates and excoriates the mucous membrane of the vulva. He has repeatedly known this state induce urethritis in the male.

One case would have been enough if it had been shown that the disease, thus originated, was not simple urethritis, but real gonorrhœa accompanied by chordee, swelled testicle, irritable bladder, sympathetic pains, and so on; and especially that it was capable of giving rise to identically the same affection in another person. But unless the evidence be to this effect, it is beside the question so far as identity is concerned. We want to know, not whether such a state of the uterine system will set up discharge in the male, for that might be granted, but what the nature of that discharge is. The belief in the specific nature of gonorrhœa will receive a rude, if not a fatal, shock, when it is shown that an *acid* state of the uterine mucus produces the same results as the *laudable pus* of gonorrhœa, and the curdled *albuminous* discharge of leucorrhœa, formed by the mingling of the free *alkaline* secretion from the glands lining the cervix uteri with the *complex acid* of the vaginal fluid.

Admitting that urethral discharges do appear in men as the result of connection with women laboring under leucorrhœa, in whom there is no reason for suspecting a present or previous blennorrhagia, it must, I think, be equally admitted that the facts supposed to establish this are, when we come to sift the matter closely, generally vague and few; and in no instance that I have read of is there anything to show that the surgeon had satisfied himself as to the previous state of the organs in both persons, yet

[1] The Pathology and Treatment of Venereal Diseases, p. 63. 1866.

without such evidence belief must remain mere conviction; it cannot be raised to the stability of a truth. Whether it be the first infection, or one of many, and in whatever kind of constitution it may occur, a discharge thus set up is, I must repeat, usually much milder than gonorrhœa in its symptoms, and rarely inveterate in its nature. But the infecting power of the latter disease is a matter of every-day experience; it can be demonstrated by experiment; severity, at the first infection at any rate, is the rule rather than the exception, and out of many cases some are sure to be obstinate; infection is almost a certain result when no precautions are taken to guard against it; and lastly, this infection may be, and is, reproduced to almost any extent, even under much the same circumstances which seem to interfere very materially with the diffusion of it from the first-named class of causes. Moreover, those who support the prevailing view, seem not to notice one point which involves something like a contradiction or an inconsistency. It is at once conceded that a man who gets gonorrhœa from a prostitute, has derived it from the same disease in her; but only too often, in narratives of infection due to other kinds of illicit connection, a *deus ex machinâ* must be evoked to clear up the mystery.

I suppose most medical men have heard of cases where discharge from the urethra resulted from connection, when there was no reason to believe that the female, supposed to have communicated the disease, had ever been infected. One patient, whose truthfulness I never saw any reason to doubt, assured me that he had three times attempted to keep up connection with his wife, and had on each occasion been obliged to desist owing to gonorrhœa coming on.

But even supposing such an affection were genuine gonorrhœa, the evidence would count for nothing unless the previous history of the parties, and especially of the husband, was carefully investigated. Few facts in the pathology of this disease are more certain, than that a slightly inflamed, sensitive state of the urethra may remain for many years uncured, and not revealing its existence by any visible sign, and yet upon the stimulus of connection with even a perfectly healthy woman develop at once into a purulent running. That true gonorrhœa, however, was ever thus set up in a man never previously infected, I must, judging from experience, respectfully decline to believe. In every case such a gonorrhœa, when I have seen it, ran a different course from the genuine complaint. It may have sometimes resembled a mild attack of the latter, never a severe one.

If the prevailing theory, too, be correct, how does it happen that, in every case of very severe results from gonorrhœa, swiftly progressing retractile stricture, bad swelled testicle, cystitis, inflammation and suppuration in the prostate and seminal vesicles, severe gonorrhœal rheumatism, and the serious complications of this, pyæmia and endocarditis; in gonorrhœal peritonitis, phlegmonous inflammation and nephritis, we always find, when there is a history at all, one of distinct gonorrhœal infection?

Numerous histories of cases are to be found, showing, in the opinion of those who relate them, that gonorrhœa can be innocently generated. I believe these accounts are put forward in all good faith; but while I unreservedly admit the veracity of the authors of them, I demur to their conclusions. I do not say that gonorrhœa never arises in this way, but that they have not proved that it does so. Possibly enough they may be quite right and I may be as far wrong; my contention is that their evidence does not go so far as they assume. Their cases are, no doubt, numerous; but unless the issues can be narrowed to points bearing vitally on the question, unless the cases are individually so convincing as to count for positive testimony, they carry no more weight collectively than singly; merely adding to the bulk of weak evidence will not do away with the radical vice of its quality. When it can be shown, in even a very few instances, that both persons could be proved to have been free from all previous disease at the time when the gonorrhœa was thus engendered, then, I apprehend, the believers in its specific nature must give up the cause for lost. Till then, I think we are justified in assuming that, so far as the evidence on behalf of leucorrhœa is concerned, the matter by which gonorrhœa is communicated may be of as specific a nature as the lymph of the cow-pox vesicle,[1] and that the supply of the infecting material is kept up in the same way in both cases—namely, by propagation from individual to individual. Of course, this does not mean asserting that it is never generated spontaneously in the female; possibly such may be the case at times. The disease must have begun with some individual, and accordingly there is nothing so very improbable in its beginning again in the same way. Neither is it impossible that a simple leucorrhœa or vaginitis may, by some peculiar state of the health, be intensified into a contagious form. We are, after all, dealing to a great extent with probabilities, and I am as ready to accept the new doctrine when it can be proved to be the more probable of the two, as I am at present to abide by my own.

During a four years' apprenticeship to a surgeon, who, though living in a very small town, had one of the largest practices in Cumberland, I saw but very few cases of gonorrhœa, certainly not a dozen, though every instance of such a disease must have come to my knowledge. Of these, I know that some were caught from sources foreign to the place, being either contracted in a large town, or from intercourse with some strolling player-girl, or some young woman who had recently been in a large town; and this might easily have been the case with the others, as girls, known to be of loose character, though not avowed prostitutes, of whom there were only

[1] "The common cause [of gonorrhœa] is the application of gonorrhœal matter during sexual intercourse. Although the existence of this animal poison has only been inferred from the effects, yet there can be little doubt that there is such a poison of a special nature, and that it does not arise simply from indiscriminate sexual intercourse."—Tanner: Op. citat., vol. i, p. 306.

two or three in the place, were every now and then returning home from such parts. I had ample means of knowing that this paucity of gonorrhœa cases occurred also in the practice of other medical men. Yet the town ought to have furnished its quota of gonorrhœa, for certainly the morals of the lower classes, and indeed of all the young men as a rule, were as lax in respect to connection as they could be, and I never heard of any person taking precautions against infection; every one, lay and medical alike, believing that the disease was always imported. In a paper by Dr. Rocchi,[1] comment is made upon the fact that this is noticed also in Italy, gonorrhœa, except when imported from some populous part, being quite unheard of in the country places, where yet the conditions mentioned by Ricord, and those who support him, as requisite for its generation are present, especially during the heat of summer, and among a class of people not remarkable for cleanliness.

The microscope, from which we might fairly expect help, leaves us completely in the lurch. According to Dr. Tyler Smith,[2] it shows the products of gonorrhœa in the female, and of leucorrhœa springing up spontaneously, but capable of giving urethritis to the male, to be almost identical. But then, on the same showing, there may yet be a very marked difference; for there is no positive distinction between the discharge of leucorrhœa "accompanied by sterility," and that "attended by the usual aptitude for impregnation," conditions evidently thought by Dr. Tyler Smith himself to be widely distinct.

This gentleman, whose painstaking researches and cautious inductions entitle all he says to our respect and confidence, gives[3] an account which is calculated to make us pause before accepting the modern doctrine. Although he defers to M. Ricord's authority, although he starts with an expressed wish to find evidence that gonorrhœa may be generated by leucorrhœa, his strong love of truth compels him to leave the question undecided. He had great opportunities of observation; he was ably assisted; he tells us that it was his habit to interrogate the husband strictly about his early days; he did not forbid connection when the wife was suffering from leucorrhœa unless the symptoms were very severe;[4] yet all his experience only furnished one case of infection, and that one very incomplete. He tells us that a lady, in whom epithelial leucorrhœa arose spontaneously, gave her husband urethritis, and afterward blennorhagia, but there is not a single word to show what the course and symptoms were in either attack.

In order to follow up this part of the argument, I will give two instances showing, it seems to me, the contagious nature of true gonorrhœa, one in its rise, the other in its decline; and I think, taking all the facts together, that they fairly represent somewhat common occurrences.

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[1] Giornale italiano, vol. ii., p. 196. 1871.

[2] Pathology and Treatment of Leucorrhœa, p. 133. 1854.

[3] Op. Citat., p. 126. [4] Op. Citat., p. 213.

A young girl, of respectable family, formed an illicit connection with a gentleman who, after a time, gave her gonorrhœa. This was her first wrong step. Before she became aware that there was anything amiss with her, she had connection with a relative, a man holding a good post in a public office, and who was very much attached to her. She had gonorrhœa in a severe and obstinate form, and her relative had the same disease, accompanied by gonorrhœal rheumatism ; in the end, he too got quite well. All intercourse with the first paramour was at once broken off, but I did not feel so sure that the connection with the second ceased entirely. Some months after this she had connection, once, with a man whom she met at a ball, at least this was her version of the story, and very shortly after with her relation. Three or four days after, she came to me in great alarm at finding herself again infected. She had, in the interim, met her ball-room friend, and violently upbraided him. He did not deny the fact of previous infection, but justified himself by saying that he quite believed there was nothing left of his complaint to do any mischief. Within two hours after her visit I was consulted by her relative for what was evidently the beginning of a discharge. He had gonorrhœa, again complicated by gonorrhœal rheumatism, and the girl had a pretty sharp attack of gonorrhœa.

A gentleman had connection with a young person whom he had long known, and whom he had excellent reasons for believing above suspicion. It was followed by a discharge, which a noted specialist considered to be gonorrhœa. The surgeon examined the girl, and stated that there was nothing beyond slight leucorrhœal gleet, scarcely more than the natural mucus; in fact, he more than hinted that she could not have given the disease. Three times did this patient renew his intercourse with the girl, each time getting previously cured of his old discharge, and each time getting a new one. The surgeon still persisted in asserting that the girl had nothing but a little redness of the upper part of the vagina with some glairy mucus ; however, with the view of making all safe, he cauterized her thoroughly. Soon after this she married, and within a few days her husband began to show unequivocal signs of gonorrhœa, from which he suffered long and severely. His wife had, as before, little the matter with her. I now learned that, three years previous to all this, she had been infected with gonorrhœa, but that she had, as she believed, got thoroughly well and remained so. I had good reason to believe that neither of these two men had ever had gonorrhœa.

Judging, then, from this and similar cases, I am disposed to believe that *even a slight amount of gonorrhœa is more likely to excite the same disease in another person, than a pretty high degree of leucorrhœa is to bring on even simple urethritis.*

Gosselin thinks that in many of these cases the real secret is that the female has not been examined at the proper time, six or eight hours after she has made water, as on waking in the morning for instance ; and Dr.

Howard throws further light on this point by maintaining [1] that the disease will linger in the small glands of the female urethra, first described by Dr. Skene of Brooklyn, and that these will continue to pour out true gonorrhœal pus although the patient presents no other evidence of the disease, a view corroborated, he considers, by the fact that in a woman, who thus infected her husband, applying carbolic acid crystals to these glands put an end to the communication of the gonorrhœa.

Ulceration of the neck or mouth of the womb, even accompanied by the formation of a stringy plug of mucus, occurring in a woman who has never been infected, I should be inclined to set down as incapable of exciting gonorrhœa; the case assumes a very different aspect when she has been exposed to the risk of disease, and I have never myself seen this state in the female under other conditions. In the careful examinations made at the Lock Hospital, it is found that women, having no outward discharge, and yet infecting men, are seldom without this morbid secretion from the os uteri or ulceration of the os or cervix.[2] If it could be shown once that such an affection had sprung up in a woman prior to her having any sexual congress, and then given a discharge to another person, the non-specific character of gonorrhœa would receive most strong support; but I suppose most persons familiar with hospital practice of this class agree in the belief that this affection, which I look upon as pathologically distinct from the secretion of mucus that in the normal state plugs the canal of the cervix uteri during pregnancy and the intervals between menstruation,[3] is in nearly every case the sequel of gonorrhœal vaginitis; which means in other words, that women of this kind, without any visible discharge, give gonorrhœa, not because some natural secretion is in them in a morbid state, but because they have had gonorrhœa. Dr. Tyler Smith gives an admirable description of the secretion sometimes seen in leucorrhœa, which might easily be confounded with the foregoing, but which yet seems to be quite distinct. It has been stated that the plug has been found in some instances to contain "neither pus-corpuscula nor granule cells," but I assume that it is then incapable of conveying infection. We could scarcely, however, expect to find pus corpuscles in cases of leucorrhœa when the secretion consists of mucus, and where the white color is due, not to the presence of inflammation, but to the action of the vaginal acid on the mucus. Under the head of ulceration are included here cases of congestion with detachment of the epithelium.

Purulent discharge from the interior of the womb, or, to speak more correctly, from the interior of the canal of the cervix, innocently acquired, sometimes wears such a serious look, especially if accompanied by vaginal discharge, that we might suspect it to be an agent of disease, and I have

[1] Chicago Medical Review. Quoted in London Medical Review, p. 329. 1882.

[2] Medical Times and Gazette, vol. i., p. 9. 1868.

[3] Pathology and Treatment of Leucorrhœa, p. 36. By W. Tyler Smith. 1854.

been consulted in one or two cases where a slight puriform running had, judging from the evidence, been set up in this way; but I have not yet met with an instance of anything, thus generated, which could be set down as gonorrhœa, and indeed I have seen but little of the affection. Where there has been previous disease, a certain amount of infection may remain and become a source of mischief. I have not noticed any full observations on this affection individually. Mr. Berkeley Hill says,[1] that a purulent discharge from the uterus is an almost universal condition among prostitutes, but I apprehend that he refers rather to the complaint described in the foregoing paragraph.

There is reason to believe that connection during or directly after *menstruation* produces purulent discharge in the male sometimes of rather a severe character. I have met with a few cases where, though disposed to be skeptical, I could not shut my eyes to the fact that such might have been the case. There is, however, always this difficulty in the background when the female is of loose character; a person in such a position may have an uncured gleet hanging about her, and a woman who would not be sufficiently particular on the one point, is just the most likely person to be negligent on the other. Women with a strong sense of self-respect do not usually allow such approaches. Any one might, of course, be surprised into such a mistake once, especially when young and newly married; and it is possible, from the fact of menstruation being often succeeded by leucorrhœa for a longer or shorter time, that the close of the monthly discharge leaves the organs in a state closely akin to that of the first stage of gonorrhœa. In some forms of dysmenorrhœa an attack of vaginitis complicates every catamenial period. But I am led to rate the infecting power low. I have been applied to four or five times by men who had been alarmed by finding that they had had connection with their wives at too early a period after menstruation, so as to cause a return of the discharge, and even when it had come on again during congress; but beyond the feeling of uneasiness and irritation, I never knew any ill results follow. In one of these there was ample reason for knowing that the patient was liable enough to infection in the other way, seeing that I had attended him for a most severe gonorrhœa, ending in obstinate gleet, which had lasted between six and seven years when he came under my hands.

In none of the few cases where I have had to treat discharge from the male urethra, stated by the patient to have arisen from intercourse at the menstrual period, was it complicated with orchitis or irritable bladder, and in one only was chordee present, and then in a very mild form. Neither have I met with an instance where, either through accident or imprudence, the contagious nature of the discharge thus called forth was established by the fact of its being conveyed to a third person. Mr. de

[1] Op. citat., p. 376.

Meric, however, in his answers to some questions on this head, following upon a paper read by him before the Harveian Society, distinctly, as I understood him, stated that the conveyance of infection under these circumstances had been noticed.

We now come to the most singular cause of all, that of a perfectly healthy state of the organs in the female. I wish to avoid tiring my readers with more references than I can help, and therefore confine myself mainly to the statements of M. Ricord, who asserts the fact in the most unequivocal manner. What is equally extraordinary, he tells us[1] that a man acclimatized to his wife has connection with her and escapes, while the lover who follows, not being acclimatized, pays the penalty of his indiscretion. Mr. Henry Lee reproduces[2] this view, but rather as emanating from M. Ricord than as according with his own experience. Some other eminent writers seem to have adopted it unreservedly; and M. Fournier improves so far on M. Ricord's view as to maintain, that more frequently than otherwise a woman, who gives gonorrhœa, has not got it; while M. Linas asserted[3] before a medical society that "history teaches us" that gonorrhœa may be given by the most chaste of wives.

That gonorrhœa may arise without any outward signs of disease in the female we have just seen, but I understand M. Ricord to go far beyond the cases I have spoken of. His theory is, that a woman who has been examined with the speculum and found to be perfectly free from disease, either of the outward parts or of the womb, will yet give gonorrhœa, although she has never had it, to a man who has got neither gleet nor a disposition to it. Either he means this, or he means nothing beyond what is generally known. I must leave it to others to affirm or controvert a tenet which is in flat contradiction with my experience, while I pass on to the discussion of one which seems equally in contradiction with general experience, and that is the escape of the husband. How comes it that he gets off? He was not always acclimatized, and ought, on M. Ricord's own showing, to have one time or other shared the lover's fate. I am therefore afraid that the theory of acclimatization, as M. Ricord calls it, and which may remind some of my readers of the old belief that husband and wife often grow to be like each other in features, will hardly help us here. Even those who so unreservedly accept M. Ricord's version, must admit that it is hardly suited to England, where thousands of virtuous girls marry every year, with their organs in the state described by him, and yet do not communicate gonorrhœa.

M. Diday does not go quite so far as his illustrious teacher; he tells us[4] that any woman may give gonorrhœa, and that he makes no excep-

[1] Lettres sur la Syphilis, p. 48.

[2] Holmes's System of Surgery, second edition, vol. v., p. 187.

[3] Union Médicale, tome i., p. 102. 1868.

[4] Exposition critique, p. 515. 1858.

tions. Let her be ever so healthy at the time of her first liaison, she may be potentially fit to do any amount of mischief in this way, and carry within her a predisposition to communicate the infectious property to any discharge she may acquire, however innocently. The list of affections which may thus become tainted is appalling, but still the vehicle is visible, and we understand that such a thing, however improbable, might happen. M. Ricord's account is simply incomprehensible. But this is all the merit that can be conceded to M. Diday's statement. It is put forth in a form which robs it of half its value. True, the picture is graphically drawn, indeed, he yields here in no way to M. Ricord, or perhaps anyone else ; the terms are trenchant and incisive enough, and the facts arrayed in a way which does credit to his skill as a writer ; but after all, it simply expresses a conviction which may be very well founded, but which may equally, as regards the evidence offered, be a truism or an error. Had he told us that out of every hundred women who marry so many have a morbid discharge, and that out of every hundred women who become liable to such discharges so many communicate gonorrhœa, we should know what to say. As it is, his account is more alarming than valuable. Let me, however, render one tribute of justice to both these charming writers. If they do not untie the knot they promote the interests of morality, for it is over the head of the erring lover, not the husband, that they hang the impending sword.

3. The third class of causes need not detain us long. Those who have seen true gonorrhœa brought on by eating asparagus or over-fatigue have been more favored than myself. I have noticed yellow purulent discharge from the urethra in an elderly man who, I have very good reason to think, was strictly continent ; and I have seen a thin, yellowish, dirty, and rather profuse discharge come on in a young patient suffering from bad influenza. Such discharges, too, come occasionally, but rarely, before us, reported by the patient to be the effect of a sprain. Again, I suppose most practitioners have now and then been consulted about a thick, white secretion and scalding, occurring in gouty persons, especially if the urine should happen to be loaded with urates and uric acid. As to M. Fournier's statement, that venereal excess is the most frequent cause of gonorrhœa, I meet it by saying that I have repeatedly had to deal with men of unbridled passions, who indulged such passions to any extent with impunity, never, indeed, had a sign of such an affection so long as they kept aloof from prostitutes, and whom I have treated over and over again for gonorrhœa contracted in the natural way. Respecting all the other agencies I have no experience, except as to two or three, and these in a negative sense. These remainders, then, are passing a bougie, masturbation, scrofula,[1] dentition, piles, and ascarides. The influence of the first I

[1] Johnson : Op. citat., p 39.

should be inclined to deny, unless the patient was suffering from gleet or a tendency to urethral discharge set up by stricture. I have passed the bougie hundreds of times for spermatorrhœa, and never saw anything of the kind; on similar evidence I question the power of masturbation, though I have recorded a case where free purulent discharge used to come on in a young man suffering from spermatorrhœa. In one elderly gentleman, who had never been affected in any way, passing a bougie only gently, even though it had been done several times previously without any such result, was followed by slight discharge with a good deal of excitement of urethra and bladder, and later on very slight orchitis; symptoms apparently as much due to excessive fatigue and thundery weather as to the instrument. Microscopic examination showed considerable preponderance of mucus; discharge had almost entirely subsided spontaneously in fourteen days, having been pretty clearly prolonged by the fatigue and thunder. Of piles and scrofula I have seen a pretty round number of cases; in not one of them was there ever a discharge innocently acquired. Of ascarides I have not had so many cases under my care, except in children; in adults I have not found anything like urethritis from such a cause, and the question of dentition I consider to have no bearing on the point.

But granting that urethritis is now and then evoked by such factors, it is, under these circumstances, as remote from true gonorrhœa as ordinary conjunctivitis is from purulent ophthalmia. It is usually of so mild and transient a nature, that in no instance where I have met with it, has it required a remedy of any kind. Dr. Francis Cruize long ago pointed out[1] a clear practical distinction between discharges produced by gonorrhœal matter, and those induced by non-specific causes. While the former tend to run into obstinate gleet, the latter pass away spontaneously. I believe this rule holds good as to the agencies included in the third class of causes; with regard to some of those in the second, especially menstruation, it is possible that there may now and then be an exception to the rule.

Mr. T. W. Nunn calls attention to another distinctive mark. In a communication to Dr. Tyler Smith, published by the latter in his work on leucorrhœa, detailing a case in which this disease caused repeated attacks of balanitis, he says he is inclined to believe that when urethritis is produced in this manner, it makes its appearance immediately after connection, that is to say, within twelve or fourteen hours; whereas the urethritis produced by a specific animal poison has a period of incubation of from four to fourteen days.

As to the suppression of any skin disease being ever the cause of gonorrhœa, I must go still further and say, not only that I have never seen it, but that I can scarcely conceive it possible. I have made hundreds, I

[1] Dublin Quarterly Journal, vol. xxxix., p. 342.

may safely say thousands, of attempts to check cutaneous eruptions, especially eczema, and never yet saw any disturbance of the health follow. Between the 16th of May, 1863, and the 18th of the same month, 1873, I treated at St. John's Hospital alone 2,148 cases of eczema on this principle, with results which justify me in asserting, what I believe I was the first English author to assert, namely, that we cannot suppress eczematous or any cutaneous discharge at will; that, if we succeed in time, arrest never produces any injurious results; and finally, that we only succeed by the use of means which improve the health, and I cannot conceive that the use of such means can bring on gonorrhœa. However, as the possibility of gonorrhœa arising from this cause is admitted in a pathological work of high standing, a work where every line seems to have been weighed, and which might be fitly spoken of as "finished with illustrious toil," I assume that such an occurrence has been noticed.

Taken as a whole, I imagine that the creed does not gain many proselytes at the present day. Now that M. Ricord's precepts no longer carry the weight they once did, now that they are no longer promulgated by some of his disciples as if not to accept them were gross, prejudiced ignorance, to doubt them, blasphemy, I am inclined to think that the old belief, that gonorrhœa is derived only from gonorrhœa, will little by little assert its supremacy. It is scarcely to be expected that those who have all along taught the contrary will renounce views which they have so sedulously inculcated for so many years, and which are, no doubt, founded on honest convictions, but we may fairly anticipate that with the lapse of time, any such opinions will vanish as completely into nothingness as a belief in the non-specific nature of syphilis; both of them being specimens of the "extraneous idols" described by Bacon, which, "begotten of the dogmas and schools of philosophers worm their way into the minds of men," and are therefore fitly ranked by him as impediments to learning.

B. *In the Female.*—1. Judging solely from what I have been able to observe, I should say that true gonorrhœa, capable, as a rule, of infecting the male, is always in the other sex, even when only assuming the form of vaginitis or vulvitis, the result of the contact of matter derived from a person suffering under gonorrhœa, generally, of course, communicated by sexual intercourse. Dr. Gaillard Thomas takes[1] the same view of the case: he considers that gonorrhœa in the female altogether arises from a specific contagion. In newly married women a good deal of purulent inflammation, pain and swelling of the vulva, redness and heat of the vagina, ardor urinæ, and uneasiness in sitting or riding on horseback, may make their appearance, and in some cases excite suspicion that gonorrhœa has been communicated. But the course of the disorder soon reveals the difference, for though in a few rare cases the symptoms rise to such a height as to require

[1] Practical Treatise on the Diseases of Women, p. 154. 1875.

medical attendance, yet for the most part they pass off spontaneously, or at the worst yield to any mild, simple treatment; whereas true gonorrhœa is a more severe and infinitely more obstinate affection, generally demanding, in the long run, a decided and sometimes prolonged course of treatment. At the same time I feel bound to admit that this view is in direct opposition to that held by some writers. Dr. Bumstead, for instance, says he has had reason to believe that the frequent repetition of the sexual act has produced gonorrhœa in women free from any previous disease. Again, an affection due solely to repeated and unwonted intercourse rarely extends to the urethra, bladder, womb, and ovaries, as sometimes happens with genuine gonorrhœa. I know cases are cited in which such symptoms were found, and where the husband most strenuously denied having had any infection at the time of marriage. Were the denial always well-founded, the believers in the non-specific nature of the disease would have a strong case here; but it is as certain as any fact can be that many men marry without being perfectly cured—some from natural laziness and neglect, some because they really believe they are cured, and a third class because they must fulfil the engagement at a stated time, etc.; and I have seen cases which amply justify me in thinking that this uncured state is not unfrequently the cause of gonorrhœa put down to a more innocent origin.

When, in a female, the signs of infection are seated *in the urethra*, the specific nature of the affection is admitted by those who oppose it when the affection shows itself in other parts, and notably by M. Ricord himself.[1] It is therefore just as well to bear in mind that, as one form of gonorrhœa is always due to a specific cause, other forms may also be due to the operation of the same law. We know that they often are so.

The next question is, can a man, who has contracted a discharge from a woman laboring under leucorrhœa, or simple vulvitis, or who is not quite free from the catamenial flow, give another woman true gonorrhœa? My reply must be that I have never been able to satisfy myself, in my own practice and observations, of such a fact, and the reader will see farther on the reasons I have to offer for exercising caution before a decision is formed.

3. Lastly, we have to consider the possibility of transmitting to the female a discharge set up in the male urethra by any of the mechanical or other irritants spoken of in the third class enumerated previously. It will, perhaps, conduce both to clearness and brevity if we take the two last sets of causes together.

In the first place it is to be remembered that we must often deal with a very suspicious class of facts. Trustworthy men, the men on whose evidence we could best rely, are the most likely, when they find themselves suffering under a discharge of this kind, to abstain from connection, and

[1] Lettres sur la Syphilis, p. 61.

very properly too. Consequently the proof most wanted is the most difficult to get.

Secondly, we have to separate facts which have been confounded together. For instance, it seems to be assumed by some authors, that when symptoms run high, infecting power must be present. But the two questions are quite distinct. Severity is not evidence of contagious power. Take the case of Swediaur. He gave himself as bad urethritis as a man could well have, by injecting ammonia into the canal, but as evidence of such a disorder being able to infect the female, his experiment is worthless. Yet who can doubt that some of those who speak of his case have not kept the line of demarcation so clearly in view as they might have done?

Some of the causes assigned may at once be rejected; they are far too improbable for any rational being. Thus, *e.g.*, Dr. Tanner was present when a surgeon suggested that making water in the night air might bring on gonorrhœa; and Mr. Johnson relates[1] that a patient wanted the students at St. George's Hospital to believe that in his case gonorrhœa had been brought on by the exertion of lopping a tree; he having nothing the matter with him when he began his task, and finding the discharge fully developed when he came down!

A medical man credulous enough to fancy that night air could exert any such influence would not be likely to investigate facts with proper care; and a patient who had the effrontery to tell such a barefaced falsehood would be just the person to conceal the fact that he had had intercourse with a prostitute. The possibility of late hours, too, having any such effect is one I should be very much inclined to question. It is, therefore, only against the more probable of these causes that any arguments are directed.

It must always be kept in view that many patients are possessed with a desire for finding any reason but the right one. It is not that they wish to deceive the surgeon. Most probably it arises as much as anything from a desire to extenuate the responsibility of the female, or to set up a higher standard for her health and physique than they are entitled to. Be that as it may, it is quite certain that they will snatch at a straw to save their drowning theory, and are only too happy to find the surgeon concur with them in ascribing the disease to such innocent causes as a strain, a cold, etc. Still, making all allowance for bad logic, for the morbid desire to impose on medical men on the one hand, or on their own judgment on the other, it must be granted that cases of discharge from such causes are met with.

And first, I have to urge that a very slight gleet, a tender state of the urethra left behind by a gonorrhœa suffered to die out of itself, or only

[1] Op. citat., p. 27.

treated with medicines, meaning really uncured gleet ready to break out again at any moment, and sometimes even incipient gonorrhœa, are often at the bottom, not only of the disease conveyed to the female, but of the symptoms set up in the male also. I have been consulted in several cases where the urethra had remained free from visible disease for a pretty long period, owing apparently to the patient leading a quiet life, and abstaining from connection ; and where yet the disease soon ripened into dangerous activity under the influence of sexual indulgence. As to gonorrhœa itself, I believe it to be, both in its decline, when there is scarcely a speck of discharge left, and in its nascent stage, when the most timid might think there was no ground for alarm, infectious in a very high degree for some persons.

A lady, whose husband had brutally assaulted her, left him in consequence. As her womb was thought to be injured, I carefully examined her, and certainly I had every reason for saying that she was at this time perfectly healthy. Some time afterward she became attached to a gentleman who had been very kind to her in her troubles, and who occasionally consulted me for a very slight gleet ; so slight, indeed, that sometimes it left no mark on his shirt, sometimes a pale one not bigger than a sixpence, but never more than this. This fluid was simply whitish mucus. Had the patient asked me the question, I should have said that such a discharge, albeit the relics of a gonorrhœa contracted two years previously, was innocuous ; fortunately, he took this responsibility off my shoulders. The attachment was followed by connection, of which I first became aware in consequence of the lady presenting herself in great distress, with every symptom of a violent gonorrhœa, from which she suffered very severely. Of course, the infection might have been derived from another source ; but knowing her family intimately as I did, having always heard, even from her husband, that her character was up to this time irreproachable, and that her disposition was averse to anything like sensuality or impropriety, I think it may be inferred that she caught the gonorrhœa from my patient.

When, however, there are no pus-corpuscles in the discharge, there is most probably no danger. I need scarcely say that it is not very easy—perhaps it is impossible, to prove such a point, especially as one source of observation, the existence of pure mucous gleet in the male, is not very common. The only evidence I have to offer is simply that I have never been able to find, either in the practice of others or in my own, a single complete history of a case of gonorrhœa being communicated to the female, unless there was positive proof of, or very strong reason to suspect, the existence of a certain amount of pus in the discharge by which she was infected. Dr. Durkee says,[1] that if there be no pus-cells in the discharge, there is no danger of infection, and the reader will see that I agree with

[1] Op. citat., p. 29.

him. The requisite amount, however, seems in some cases to be very small.

Mr. R—— consulted me about the middle of December, 1873. His account was, that owing to protracted absences from home, and the disinclination his wife had long shown for sexual intercourse, he had remained almost always continent for the last five years ; that, three days previously, he had in the evening a suspicious connection, which was followed, two nights later, by intercourse with his wife ; and that he had been alarmed by noticing, the morning after, that is to say the morning of his visit to me, a slight discharge, which he distinctly stated had not shown itself before. On examining, I found the lips of the urethra wet with a sticky secretion, which looked more like thick serum than mucus ; there did not appear to be any pus in it. Within a few days his wife began to complain of uneasiness in the private parts. I examined her, and found considerable discharge from the vagina ; there was also some swelling with tenderness in the right groin. The next day, the discharge being thoroughly washed off, I cauterized the vagina pretty freely, and two days after repeated the process. The affection, whatever it might have been, yielded to this treatment, which was seconded by the use of aperients, preparations of potass, rest, and low diet. In the husband the symptoms developed into distinct purulent running. I may add that this lady was not in any way subject to leucorrhœa, having had no symptom of the kind. The urethra was not implicated in her case.

Contrast this with the following case, in which there was as great a degree of incipient inflammation from a mechanical irritant. A gentleman, who had suffered severely from spermatorrhœa, married. Finding that connection only made him worse, he came up to London, and placed himself under my care. I found the tendency to emissions as strong as ever, the urethra excessively tender, red, and secreting mucus freely. On placing a little of this under the microscope, it was seen to be swarming with inflammation corpuscles (cells). There was, however, no pus, nor had there been any, and there was no history of gonorrhœa. This condition seemed to have been brought on by masturbation, followed by excessive connection. As he had got the fancy into his head that he must have given his wife the same disease as himself, I examined her at his request. The most careful search with the speculum revealed only a perfectly healthy state. Some time after he again consulted me, and stated that she had remained quite well.

It does not, however, follow from what has just been said, that every slight gonorrhœal discharge, in its first or its last stage, must necessarily convey infection. Just as there are some men so constituted that they are almost certain to catch gonorrhœa nearly every time they commit an imprudence, while other men repeatedly court risk and yet escape again and again, or if they do in the long run, as perhaps always happens, become

infected, the gonorrhœa dies out of itself, or yields to such simple remedies as a few injections of cold water; failing, however often the attack may be repeated, to bring on any of the more severe results, or to entail more than some slight inconvenience, so does the susceptibility vary in women. Some will suffer most severely and for a long time where others would probably get off safe; or again, a woman may here and there be found so constituted as to expose herself with impunity to contagion in its worst form. I have known instances where men, with some amount of gonorrhœal discharge still remaining, had not communicated any disease to young women, whom one might have thought susceptible enough; I am speaking, too, of cases where the argument about frequency of intercourse having something to do with the power of resisting infection could not be urged; and M. Robert says that women having connection with men in the first stage of blennorrhagia, constantly avoid infection. But supposing that we can look upon both these positions as established, they are only rare instances of a disparity in receptive power which extends itself to all diseases and both sexes.

The reader has most likely pretty well anticipated what I have to say about the probability of urethritis, brought on in the male by any of the irritants mentioned in the third class being conveyed to the female. I have already given my reasons for saying that the disorder is mild, and that the cases are fewer than are sometimes supposed; that it is really quite an occasional event when running is set up by such causes as cold, gout, strains, etc. Still, as they are met with, we have to investigate the fact of their transmission. Now though I have once or twice known men so infected have connection, not only with their wives, but with other women, I have never seen any discharge whatever thus brought on in the female; or rather, I ought to say that the answers to my questions have been in the negative, for I never had an opportunity of hearing the evidence on the other side. At the same time I ought to add that my experience here has been small, although I have seen so many cases of gonorrhœa.

It is quite certain that some of those women who have suffered from gonorrhœa and discharge produced by other causes than connection, draw a broad and practical distinction between the two. Among other cases I may state the following:

A lady was infected with gonorrhœa by her husband. After being under the care of two surgeons, one of whom practised chiefly in this special branch, she consulted me. I had great difficulty in curing her, and only succeeded by means of repeated blistering and cauterizing the vagina and mouth of the womb freely. She now separated from her husband. A considerable time after this she married again, and again contracted gonorrhœa, which also required a considerable time to remove. Seven years subsequently she consulted me for a muco-purulent discharge from

the vagina. Knowing how severely she had suffered on the two former occasions, I gave a guarded opinion as to the time it would require for a cure, but, to my surprise, she avowed her conviction that she would soon be well, as the discharge had not arisen from connection, and as she had three years before suffered from a similar, but a more severe attack, after long exposure to great cold when travelling, which, though accompanied by considerable pain and even the formation of abscess, got quite well in a few weeks, with very simple treatment. It was a very different affair for all that, she said, from either gonorrhœa. The result in the present case proved that she was right, as she was well in ten days, though she only took some saline and merely used a lead lotion.

Against this we have to set the experience of Dr. A. Hiller, who, it seems,[1] inoculated his own wife with the muco-purulent secretion brought on in the urethra by a mechanical irritant, and succeeded in reproducing the discharge. I have not seen his pamphlet, and trust entirely to the abstract of it in the German "Archives of Dermatology," which does not contain any account of the experiment. Without contesting the accuracy of the conclusions drawn by Dr. Hiller, I am yet forced to say that an experiment, designed to succeed, is a very different affair from the facts of every-day life; and that it would require not one, but several trials to establish the fact of communicability, and a separate series to show that the disease, so generated in the female, was identical with gonorrhœa. Inoculation is, no doubt, a valuable means of observation, but it has more than once led to serious error.

Point at which Infection takes place in the Male; Seat of Gonorrhœa in the Male.—Infection most probably takes place at the reflection of the mucous membrane from the urethra over the glans; the lips of the urethra. I imagine no fluid from the female can possibly enter the urethra during connection, owing to the turgescence of the penis completely closing the passage; and were any introduced, it must, one would think, be forced out again when the semen is expelled. The glans seems in no way implicated in the process, as gonorrhœa is met with often enough in Jews and others who have the glans uncovered from youth upward, and in whom the skin covering it is so dry as to be apparently quite insusceptible of infection. Moreover, the symptoms at the commencement are, I believe, invariably limited to the neighborhood of the lips; chordee, pain in the perineum, irritable bladder, and swelled testicle never appear till the inflammatory symptoms near the mouth of the urethra have lasted some little time.

I shall perhaps be told that the presence of chancre in the male urethra is fatal to such a view, as in this case discharge from the female *must* be carried down the urethra. There is, no doubt, a good deal of force in the argument. I am myself disposed to think, from the presence of chancre

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[1] Archiv. für Dermatologie, etc., B. 4, S. 555.

manifesting itself so generally within a very limited range of space, that the chancrous action begins at the mouth, and, when it does not expend its force there, spreads in a diffused form, like the gonorrhœal action itself, till it reaches a part of the urethra where, owing to peculiarity of tissue or tendency to take on an ulcerative action, it can develop itself. My reason for assuming that something of this kind occurs is, that chancre has been found so low down the urethra that it really requires a stretch of the imagination to believe any fluid from the vagina could be propelled so far along a narrow and, at the same time, swollen canal; especially considering how strong the disposition is of the urethra to extrude everything in the shape of a foreign body, and even its own secretions when more copious than usual.

The seat of gonorrhœa varies most materially, both according to the date after infection at which the patient is seen and the disposition of the urethra to take on the purulent action, a disposition which is not always alike in the same individual, and which is certainly widely different in different persons. At the outset the seat of the disease is, as I have said, limited to the very vicinity of the mouth of the urethra, but after a few days have elapsed we find every degree of severity as to extent. In some persons the inflammation spreads rapidly, in others slowly, backward, reaching in succession the bulb, membranous, prostatic portions of the urethra, the bladder, and so on. I tried hard for a long time to make out if there was any law under the influence of which this extension takes place, but after collecting a number of observations I gave it up.

These views were made public several years ago at a meeting of the Medical Society of London, and again at more length in the third edition of this work, published in 1871. Some years ago an important paper on the subject appeared from the pen of M. Ledeganck.[1] This gentleman, who has examined the urethra in the living subject by means of a cylinder of thin glass, says that in the majority of cases the disease begins in the fossa navicularis. Fifteen or twenty hours after infection, he tells us, the vessels of the parts are injected, the seat of the hyperæmia being strictly limited to the frænum, and stopping almost at the borders of the meatus. On the second day the injection has extended to the interior of the navicular fossa. When the urethra is examined with the glass, it is found that the mucous membrane presents a port-wine hue, which springs from the anterior lip of the meatus and extends down the canal in the form of two or three descending and diverging striæ. On the third day the port-wine hue has become intense, and the part so colored has the form of a myrtle-leaf, with the base at the anterior border of the meatus, and the apex about three-quarters of an inch down the passage. After the third day the in-

[1] Journal de Médecine, November, 1871. Quoted in the Practitioner, vol. viii., p. 183.

jection extends rapidly toward the deeper parts, and its limits can then no longer be accurately fixed. According to Desormeaux the disease has by the eighth day engaged the anterior half of the urethra, the mucous membrane being red, rough, and presenting the appearance of superficial ulceration, the exfoliations of Fournier, like those sometimes seen in balanitis. In this case the endoscope is an insufficient guide, as I have known the prostatic part of the urethra and the bladder affected within the first week.

Dr. Cruize concludes that in true gonorrhœa the inflammation spreads backward over the whole length of the canal, and then either contracts the area of its operation toward the orifice, or fastens upon the posterior tract of the urethra from the bulbous to the prostatic part. When it fixes itself near the bulb, which is its seat of predilection, it brings on a granular state of the urethra, which has no tendency to get well of itself. Desormeaux maintains that after a time the disease tends spontaneously to contract its area. The anterior part of the canal may reassume a healthy appearance, and in many persons the prostatic portion may recover its normal state, while the bulb and membranous part of the canal are still affected. In some rare instances the inflammation is limited to the navicular fossa.

There is no such thing as "the specific seat of gonorrhœa." In a dozen successive cases the area and seat of the disease may not be alike in any two. How and when the idea originated that the disease is confined to the first two inches of the urethra, I have not been able to make out. Hunter, who has been saddled with the responsibility, never said anything of the kind; he certainly looked upon it as the part most commonly affected,[1] and contended that the inflammation does not usually go farther than two or three inches from the meatus,[2] a doctrine taught by at least one surgeon,[3] though, perhaps, not very clearly, long before the appearance of Hunter's work; but he never expressed such a view as that the inflammation is always confined to this part; so far from it, he distinctly says[4] that "we sometimes find the irritation and inflammation exceed the specific distance and spread through the whole of the urethra." Cockburn, too, in the fourth edition of his work on gonorrhœa, published in 1728, if not in his earlier productions, expresses[5] his conviction that the inflammation extends to the neck of the bladder.

Again, Sir Astley Cooper examined the body of a man executed at the Old Bailey while suffering under gonorrhœa, and found that the inflammation was greatest in the first three inches of the urethra, but that the lining membrane was inflamed up to the membranous portion.[6] The doc-

[1] Treatise on the Venereal Disease, p. 50. 1786.
[2] Ibid., p. 47.
[3] Venereal Gonorrhœa, p. 18. By James Neville. 1754.
[4] Op. citat., p. 51.
[5] Page 271.
[6] On the Structure and Disease of the Testis, Part II., p. 15. 1830.

trine of limitation to a specific seat was also opposed, long ago, by an excellent observer, Dr. Egan, who as far back as 1848 stated [1] that gonorrhœa sometimes engages the whole extent of the urethra, and by Mr. Colles in 1850, who maintained [2] that the inflammation may spread as far as the bladder, and even at times to the ureters and kidneys. He found the urine loaded with pus from the bladder in two or three days from the beginning of the gonorrhœa.

Post-mortem examination reveals little for or against M. Ledeganck's account. I have only twice examined a gonorrhœal urethra after sudden death. Both patients committed suicide. It was difficult to say exactly where the inflammation, which was principally shown by a punctiform reddened state of the membrane, really stopped; but it could not be said to extend beyond three and a half inches in one case and three in the other. Hunter simply says that in such cases he found the urethra a little bloodshot. Dr. Stoll, of Vienna, examined very carefully the urethra of a man who died in his hospital while suffering from "a virulent clap." He found the internal surface preternaturally red, two of the lymphatics white and enlarged, and puriform matter oozing out from the internal membrane, especially at the lacuna.[3] Drs. Jones and Sieveking only state that the mucous lining becomes swollen, injected, and covered with mucus or muco-purulent secretion, the follicles and lacunæ being attacked, particularly the lacuna magna. Dr. Charteris, in his account [4] of a post-mortem held on a lad who died in six days of pyæmia from gonorrhœa, says "the interior of the anterior part of the urethra was congested, with a small longitudinal thickened red patch, a quarter of an inch long, on the floor of the urethra, three inches from the anterior orifice." Fournier gives among the post-mortem signs tumefaction of the mucous membrane, "linear arborization," punctiform injection of the canal, redness of the urethral sinuses, granulations developed at certain limited points of the passage and most frequently united into groups, and exfoliation of epithelium very much akin to ulceration.

M. Bonnière, who unequivocally maintains the specific nature of gonorrhœa, examined [5] the bodies of several soldiers who died of Asiatic cholera in 1854, while suffering from gonorrhœa in its most developed form. He found very slight traces of inflammation in the navicular fossa; the surface was punctate, red, and robbed of its polish. In the spongy part the mucous membrane was thickened but scarcely reddened; the appearances in the membranous part resembled those in the fossa. But everywhere he noticed that the foramina were visible, and that the circumferences of their orifices were of a violet red and deprived of epithelium.

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[1] Dublin Quarterly Journal, vol. v., p. 404. [2] Ibid., vol. x., p. 103.

[3] Swediaur: Op. citat., p. 24.

[4] British Medical Journal, vol. ii., p. 712. 1876.

[5] Archives Générales de Médecine, tome i., p. 405. 1874.

According to him the parts capable of taking on gonorrhœal action are the glans, prepuce, urethra, especially the navicular fossa and prostatic region, excretory canal of glands of Littre, conjunctiva, anus, mouth vulva, vagina, os uteri, lower portion of cervix uteri and the prostatic utricle ; those refractory to infection of this nature are the rectum, lachrymal canal, body of uterus, seminal vesicles, vas deferens, prostatic canals, bladder, excretory duct of glands of Cowper and Bartholini. The susceptible parts are carpeted with pavement epithelium, provided with papillæ and a superficial subepithelial mesh of minute lymphatic ducts ; the others are paved with cylinder epithelium, and have a superficial vascular network. The congeries of epithelial capillary lymphatics is not to be confounded with the mesh of lymphatics described in anatomical treatises ; it is a capillary network of small vessels, the outer wall of which is formed of pavement epithelial cells. He therefore holds that in gonorrhœa there is a change of a virulent nature in the epithelial cells of the superficial lymphatic system of the mucous membrane, with pavement epithelial system, and that the virus acts primarily upon the lymphatics and epithelial cells, inflammation of the surrounding tissues being only secondary.

He considers that the contaminating pus passes through the epithelial cells by imbibition, and comes in contact with the interior of the superficial capillary lymphatics ; specific action, perhaps a primitive necrosis of epithelial cells, is thus set up ; this action propagates itself along the capillaries ; the epithelial surface is invaded nearer and nearer ; the secretion of mucus is augmented ; the epithelial cells of the deeper layers are incompletely developed ; the superficial cells are detached ; the lymphatic network is destroyed, and the mucous membrane is more or less denuded. In the secretion are found cells of pavement epithelium, little many-sided cells, granular globules showing multiple nuclei when treated with acetic acid, blood-globules, and fine yellowish granular bodies.

The disease continues to spread in surface and depth from the superficial to the submucous network. In the deep or submucous lymphatics blennorrhagia is seldom suppurative or destructive ; it is really an internal lymphitis of the submucous layer. The acuteness and violence of the disease are in direct relation to the number of the canals and the closeness of the meshes. Very intense superficially in the navicular fossa and the prostatic region, where autopsy always reveals the most vivid reddening, it is milder at the surface in the spongy region, but more intense again in the submucous tissue of this region where the deep mesh is closer. It is here that we find a certain degree of resistance in the mucous membrane, resistance which is looked upon as due to plastic infiltration, but is only the result of irritation set up in the mesh and surrounding connective tissue. The epithelial necrosis extends neither to the bladder nor to the glands of Cowper, to the prostatic canaliculi nor the ejaculatory ducts. It stops abruptly at their borders where it forms a sel-

vage. On the other hand, the disease constantly invades the glands of Littre, the excretory canal of which is laid with pavement epithelium.

Blennorrhagia terminates in necrotic destruction of the epithelium and the lymphatic canals, and the reproduction of these by the generation of a normal epithelium, but probably in smaller quantity ; the latter fact being the cause why a second gonorrhœa is milder than the first. Relapses are explained by the persistence of diseased action in the deep lymphatic bed, from which it again reaches the superficial mesh when this has been regenerated ; or it may happen that a portion of this mesh hitherto healthy is tainted by an infected part. The reason why abortive injections do not succeed is that they do not reach the submucous lymphatics. The gonorrhœal infection, following the route indicated, may reach the dorsal trunks of the lymphatics of the penis, and there excite lymphitis ; it may also extend to the ganglia of the groin and pelvis, the layer of pavement epithelium, which constitutes the wall of the capillary lymphatics and forms the internal coat of the lymphatic vessels, being the conducting agent.

This much relates to the course of simple uncomplicated gonorrhœa at the outset. The question of extension of the morbid action, as the first stage in the pathology of orchitis, will necessarily come under discussion in the part treating of that affection, as also in that relating to gleet.

Period of Incubation.—This has been so variously stated that if we allow equal weight to all who have given us the result of their observations, no time can very well be laid down. It is, of course, very often a most important question for the patient's peace of mind to know at the expiration of what term he may fairly calculate on escaping from the results of indiscretion ; but really the question is not very easily answered, and I believe the only safe way of dealing with it is, if we include after-infections, to extend the limit beyond that often laid down in works. In the case of a first gonorrhœa, the symptoms, though slight, usually set in quite unmistakably at the end of three, four, or five days. The contention that there is no proper period of incubation in gonorrhœa, that what is so called is only a time of latent action, in which the morbid phenomena are developing without being intense enough to make themselves visible, is one of the most extraordinary I ever heard of ; for what is this latent action without visible results but incubation itself, and what proof is there that the very same action is not going on from the time of infection in small-pox and scarlet fever ?

According to M. Le Fort,[1] out of 2,070 patients suffering under gonorrhœa, 778 noticed the initial symptoms of the disease within the first four days, 50 of them at the end of twenty-four hours after exposure to infection, and 869 in the second four days ; 276 noticed the earliest signs between the close of the eighth and of the twelfth day ; 112 in the fourth

[1] Medical Times and Gazette, vol. ii , p. 52. 1869.

period of four days, and only 17 in the fifth of these periods, or from the sixteenth day to the twentieth, including the latter. Supposing these statistics to represent average results, the first symptoms must be considered to appear, in upward of seventy-eight per cent. of all the cases, in the time extending from the first to the ninth day. But often enough in after-attacks the symptoms appear much later, and not infrequently in so insidious a manner that both surgeon and patient at first look upon what is destined to ripen into a true gonorrhœa, as "a mere touch of gleet." Hunter gives [1] the time as varying from a few hours to six weeks, and if no regard be paid to the difference between a mild and a sharp case, a first attack and one preceded by many others, this rough estimate may hold good. I have, however, never seen any approach to such a long duration.

An opinion that gonorrhœa is more liable to relapse at certain times of the year than at others has been advanced by some authors. M. Robert says that the spring seems greatly to favor relapses, and I have fancied I detected something of the tendency myself during the prevalence of cold, dry east winds. The question, however, is difficult to settle till we have much better data. If the mere revolution of seasons influenced the number of cases, we might expect a regularly recurring increase in spring, and of this I have not as yet seen any proof worth notice.

Seat of Gonorrhœa in the Female.—As concerns the seat of this disorder, and, by implication, the relative frequency of its different forms in women, I should say, judging from my own practice, that the vagina is the chief place of action in the first attack; that in some instances the morbid action spreads to the urethra, and fastens on it with such severity as to make this the predominant affection; and that in neglected cases, or after repeated infections, some degree of mischief will usually be found near or on the os uteri, most likely with some exudation from the canal of the cervix. Dr. Ashwell held that gonorrhœa in women is chiefly seated in the vagina, and Dr. Tyler Smith agrees with him. Out of 112 cases, Egan found [2] the vagina more or less inflamed in 98, granular erosion on the cervix in 38, erythematous condition of the os or cervix in 57, and the uterus participating in 97. Dr. Graily Hewitt considers [3] that when the vagina is attacked with acute gonorrhœa, the urethra frequently shares in the morbid action. According to the opinion of Dr. Barnes, a most truthful and laborious observer, quoted in Jones and Sieveking's "Pathological Anatomy," gonorrhœal vaginitis more particularly affects the fundus of the vagina, with some implication of the vaginal portion of the uterus; the redness is much more intense than in the simple form, and the gonorrhœal variety yields a copious muco-purulent secretion of greenish or yellowish tint. Hagemann contends [4] that the urethra and glands of Bartholini most fre-

[1] Op. citat., p. 31. [2] Dublin Quarterly Journal, vol. v., p. 408.
[3] British Medical Journal, vol. i., p. 57. 1862.
[4] Wiener medizinische Wochenschrift, S. 606. 1879.

quently of all parts take on the gonorrhœal action. In 703 cases of gonorrhœa he found urethritis in 409 and Bartholinitis (*sic*) in 383. The statement is in direct conflict with the experience of M. Bonnière,[1] who could never in acute blennorrhagia, even when it had lasted several days, detect any pus in the glands, all he could extract by pressure being a little stringy viscid mucus. The latter writer maintains that the inflammation of the interior of the neck, however virulent, does not extend beyond the part covered with pavement epithelium, that is to say, the lower portion. It is sharply arrested there, the boundary being quite definitive. In front of the os tincæ the lymphatic network is loose, and the gonorrhœal action there is mild ; behind, the meshes are closer and there it is more virulent and persistent, an anatomy which needs confirmation.

Period of Incubation.—The time at which the signs of infection appear in the female is by no means easy to decide. The hidden site of the part, and the ignorance of many women as to the nature of the complaint, and, indeed, of such things in general, make it more difficult to fix the era of its outbreak with exactness ; but the probability is that it is much the same as in men.

Milder Nature of Gonorrhœa in Subsequent Attacks.—Hunter held[2] that most men suffer more severely in the first gonorrhœa, and that "the succeeding ones generally become milder and milder till the danger of infection almost vanishes." Many authors have accepted and repeated the first part of this view, but I am satisfied that on both heads the statement is frequently at fault. It is true enough that a man who has caught one sharp gonorrhœa, with a good deal of scalding, chordee, pain, and perhaps swelled testicle and irritable bladder, does not often present himself with exactly the same symptoms ; partly, it may be, because, warned by what he has suffered, he takes more care about his next attack, and exposes himself less to infection. In such a patient the symptoms will probably enough be slighter, but often matters do not go on in this way.

Some persons suffer more in the second attack than in the first. One of the most refractory cases I ever had under my care was a second gonorrhœa ; according to the patient's account, which was perfectly consistent throughout, all the symptoms were worse than in the first. I have notes of two or three similar cases, including one in which the fourth attack was worse than the first, and one where the third gonorrhœa was more severe and obstinate than the second. Some men always have the disease in a mild form, others the very reverse. I had a gentleman three times under my care for this complaint ; it went away very quickly in each instance, and he assured me that, though he had often exposed himself to contagion, he had never had a discharge which lasted more than a week, nor was the complaint ever attended by such symptoms as chordee. On

[1] Op. citat., p. 408.

[2] Op. citat., p. 37.

the other hand, I treated a patient for eleven gonorrhœas in three years, in none of which did I notice any symptoms of abatement, there being a good deal of running, redness of the urethra, scalding, and disposition to chordee at each attack. All were cured very quickly, but for anything I could make out to the contrary, the last attack was as bad as any of the others. Irrespective of this evidence that we cannot always rely on the danger of infection "almost vanishing," I may add that I was once consulted about a case where the patient, in his written account, roughly computed the number of his infections at thirty.

Does Gonorrhœa Infect the System?—Dr. Tanner says that the occurrence of such a disease as gonorrhœal rheumatism can only be explained on the supposition of systemic infection. I am not quite clear that I understand exactly what systemic infection is. Extension of the purulent inflammation, Hunter's sympathy of continuity, either in all its integrity or in a modified form, may be imagined as possible all along the mucous membrane of the genito-urinary tract; indeed, there is every reason to believe that it takes place sometimes. Again, inflammation of the contiguous parts (sympathy of contiguity) is clearly excited by gonorrhœa, and is comprehensible enough; while endocarditis, rheumatism, and purulent deposit in distant parts show that a series of different and yet very serious actions may be set up. But I see neither proof nor possibility of the whole frame being affected; of the lungs, brain, heart, liver, muscles, and bones being enveloped in one common mass of disease, and yet this is what systemic infection must mean, if it mean what it professes to do. Possibly Hunter's "remote sympathy," of which he gave some instances, and of which I think many more might be given, offers a clue to the solution of the problem, the action indeed being strictly reflex. MM. Pidoux and Guérin believe in the existence of a species of gonorrhœal lues, and M. Féréol rather leans [1] to this opinion, which seems to me about as unfounded as anything in the shape of an opinion can well be.

Prognosis.—According to some writers, gonorrhœa is so mild a complaint as scarcely to require any rules for treatment. I heard a consulting surgeon, in large practice, assert that he always cured his patients in a week or ten days. Dr. Chambers, of St. Mary's Hospital, considers [2] that gonorrhœa is never obstinate or of long duration, unless rendered so by bad treatment on the part of the surgeon, or folly on that of the patient. Like a mild catarrh it passes off of its own accord, if the patient will only be reasonably quiet and the surgeon abstain from mischievous interference. The reader must bear in mind that these assertions are not made by any mere tyro, but by a physician to a large hospital, a Lumleian lecturer, and a well-known author.

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[1] Archives Générales de Médecine, tome ii., p. 208. 1866.

[2] Lancet, vol. i., p. 582. 1861.

This view does not in any way harmonize with my experience, which is that many cases of gonorrhœa are only subdued with great difficulty. It is in direct conflict with the experience of Lee,[1] Astley Cooper,[2] Bumstead,[3] Durkee,[4] Hunter,[5] Johnson,[6] Robert,[7] and Fournier; in fact of every one who has carefully studied the disease and written honestly about it. They tell us that, with rare exceptions the disease requires, under the best management, three or four weeks, often as many months, to cure, and that it is impossible to fix a reliable average date for the duration of gonorrhœa.

Results of Gonorrhœa.—As it formed no part of my plan to describe the symptoms of this affection, inasmuch as they have been fully and carefully laid down in many excellent works, so for a similar reason, I did not intend to touch upon the results it induces. But as accounts of the effects produced by this disease have appeared, which are enough to make one's hair stand on end, I have been obliged to break through the rule laid down. They are from the pen of Dr. Noeggerath, of New York,[8] who informs us that gonorrhœa, in man as in woman, once contracted, is, as a rule, incurable; that it renders every man who has suffered from it to a great extent sterile, and that eight out of every ten men have gonorrhœa. The wives of men who have contracted this disease either remain barren, or, if they become pregnant, abort or bear only one child. He gives the cases of eighty-one women thus situated. Out of these only thirty-one conceived. Five of the thirty-one aborted, and three were prematurely confined, thus reducing the number of child-bearing women to about one-fourth of all who married. Of the twenty-three who went their full time, twelve had one child during married life, seven had two children, three had three, and one had four. I am indebted for a knowledge of these startling facts to a review of the work in the *Edinburgh Medical Journal*,[9] for I have not seen the original, and I may observe that the reviewer seems rather favorably disposed toward Dr. Noeggerath's opinions, and speaks of the work as a thoughtful and important essay; a sentiment evidently shared by the reviewer in the *Dublin Quarterly Journal*,[10] who describes the book as inviting "the most careful consideration of the subject."

But the troubles of women who have the misfortune to marry the victims of gonorrhœa do not end here. Nine out of ten of them fall into some incurable kind of disease such as perimetritis, acute, chronic, or recurrent; oophoritis, and catarrh of the genital passages. Finally the infection of gonorrhœa is so intense, that it may be conveyed when the disease is latent. Complaints are sometimes made that we get nothing new about this disorder. Here at any rate is novelty enough.

It does not seem to have struck Dr. Noeggerath that, had his facts been

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[1] Op. citat., p. 195. [2] Lancet, vol. iii., p. 104. [3] Op. citat., pp. 63, 100.
[4] Op. citat., p. 43. [5] Op. citat., p. 69. [6] Op. citat., p. 86.
[7] Op. citat., p. 81. [8] Die latente Gonorrhoe im weiblichen Geschlechte.
[9] Vol. xviii., p. 648. [10] Vol. lvii., p. 326.

correct, *gonorrhœa would have long ago depopulated every country into which it had penetrated.* According to him eighty out of a hundred men catch gonorrhœa, and we have just seen that eighty-one such men have thirty-one children. Suppose that, for convenience sake, we take eighty-one out of a hundred, instead of eighty, as representing the proportion of infected males ; doing so will not materially affect the issue, and a second calculation by the reader will at any time set all right. If, to the remaining nineteen we allot an aggregate of a hundred children, which is, I believe, quite up to the average, this will give us a total of a hundred and thirty-nine children born to every two hundred grown up persons. It needs no reference to an actuary to show that, with such a state of matters, the disappearance of the entire population is only a question of time, and of a very short time too.

Again, out of every hundred married women, seventy-two must, according to Dr. Noeggerath's theory, suffer, sooner or later, under incurable disease of the womb, the surrounding parts and appendages, and the genital passages. This is the percentage from gonorrhœa. Add to this the cases where either such affections, or other formidable diseases of these parts, are brought on by more innocent causes, and we are driven to the conclusion, that out of every hundred married women, nearly eighty at least are suffering under severe or hopeless uterine disease. I think I may safely ask, whether there is a man living whose experience agrees with that of our author.

His statement, too, about the sterility of men who have once had gonorrhœa, does not harmonize with what I have seen ; on the contrary, I know cases enough which prove the very reverse. I attended a gentleman who had, he told me, been repeatedly infected. He had gonorrhœa to a certainty ; I saw the pus coming out of the urethra, and injected him with my own hands. Two or three years after this he married, and his wife had twins at her first confinement. Both lived, and are now fine sturdy lads. When I last saw him his wife was again pregnant. I was consulted about the case of a gentleman whose brother, himself a surgeon, told me that this patient had in his younger days so repeatedly suffered from gonorrhœa, that he believed it was rather the rule than the exception for him to have one. After marriage he had four healthy children, the somewhat advanced age of his wife seemingly alone preventing any further increase of family. I attended two gentlemen, friends of each other. One of them had as bad a gonorrhœa as ever I saw and extremely rebellious. He has now five fine children, one of them growing up quite a type of manly beauty. His friend had eight attacks of gonorrhœa, for three of which I attended him ; he has since married twice, and had children by each wife, the number amounting to six when I last heard of him. My opinion was asked about a case of somewhat alarming bleeding from the urethra, owing to chordee from gonorrhœa. The patient married directly after he was

cured, and has had fourteen children, twelve of whom are now living, and so on.

Nor am I any more in accord with this gentleman as to the serious state of health induced in the female by marriage with a man who has been infected. In many cases I have, of course, had no chance of learning the history of the case after my attendance on the husband came to an end; but in several others I know that, so far as their own repeated statements can inform me, the wives have remained free from not only uterine but any other grave disease. I have not heard that one of them aborted or was prematurely confined, and I am sure that many have not done so.

Dr. Angus Macdonald, who thinks Dr. Noeggerath has got hold of "a grand idea," has gone[1] very carefully into his views, and quotes from his own practice cases which he thinks support the theory. Want of space will not allow me to reproduce these, and I must therefore refer the reader to Dr. Macdonald's paper, and especially to his fourth and fifth cases. So far as I can understand the question, he seems only to establish the fact that gonorrhœa, even when of long standing and almost cured, may be communicated, a fact which I, for one, never denied. In a former edition of this work I called attention to the possibility of the disease being transmitted by a discharge seemingly innocuous. Dr. Macdonald also shows that gonorrhœa, thus conveyed, may set up very serious if not fatal consequences in pregnant women. Not having had much experience of such cases, I can offer no opinion on the matter. One, about which I was consulted, rather supports Dr. Macdonald. The husband was certainly laboring under recently contracted gonorrhœa, and infected his wife about the mid-term of pregnancy. Shortly after she was attacked by serious symptoms, which the medical gentleman in attendance upon her seemed to have considered as inflammation of the womb, but I did not receive the account from him, and could not get any more definite statement.

But while I readily admit the contagious power of even a very slight amount of pus in the secretion of the male urethra, I entirely demur to such a doctrine as that of latent gonorrhœa, in the strict sense of the word, being conveyed by sexual intercourse; for by latent I understand *that state in which there is no discharge existing.* I have already given my reasons for coming to this conclusion. Dr. Macdonald, however, interprets[2] latent as chronic gonorrhœa, and from what Dr. Noeggerath says, of its being a common practice to sanction the marriage of young men still suffering under stickiness of the urethral opening, accompanied by such an amount of discharge as to cause spots on the linen, it is possible that he means the same thing; but I must take the liberty of calling this gleet, not latent gonorrhœa, and of adding, by way of rider, that any medical man sanctioning marriage under such circumstances takes upon himself

[1] Edinburgh Medical Journal, vol. xviii., p. 1086. [2] Op. citat., p. 1101.

a most dangerous responsibility. Rightly or wrongly, I have always understood by latent gonorrhœa, or latent gleet, a disposition in the urethra, *unaccompanied by the presence of purulent secretion*, to take on the characteristics of gonorrhœa, or gleet, when the system is excited by the stimulus of much connection, indulgence in beer, etc.

I do not see how Dr. Noeggerath's assertion about gonorrhœa being incurable is to be met at all. A man might say the same thing about any complaint, without its being possible for another person to refute him; but I believe I am warranted in affirming that morbid anatomy does not come to his assistance here, as it does not demonstrate any change of tissue induced by uncomplicated gonorrhœa, when cured in the ordinary sense of the term. What proof of cure is to be required, beyond a return to natural appearance and natural state of secretion, I do not know.

Dr. Thorburn, who investigated the subject, and for this purpose collected the statistics of eighty-one private families, found[1] that there had been thirty-three per cent., or twenty-six in all, of gonorrhœal infection in the male; and taking all the cases of abortion, sterility, uterine and pelvic inflammations which had occurred in these eighty-one families, he showed conclusively that there was the merest fractional difference in their proportion between the previously and not previously infected classes. As regards inflammatory pelvic affections, the balance was fractionally in favor of the "free gonorrhœic cases;" in other respects equally fractional in favor of the non-gonorrhœal; results which I do not feel quite assured about understanding very clearly. Dr. Thorburn's conclusion is that the latent gonorrhœa of Dr. Noeggerath is a myth, and not an impervious barrier to marriage as it otherwise would be. Dr. Bantock, who was present when this paper was communicated to the British Medical Association, agreed on the whole with Dr. Thorburn; and added that he did not find that women, who had contracted gonorrhœa, went through pregnancy any worse than those who had not had the disease. I am glad to find that Dr. Thorburn has refuted the theory from this point of view, but with all becoming deference I must urge that my own arguments, long previously made public, appear to me quite sufficient to subvert it; for that which is shown to be impossible could never have occurred.

A case in which serious nervous symptoms followed gonorrhœa is furnished by Dr. Althaus.[2] The urethritis was obstinate, and, having long resisted injections, seems to have been at last arrested by tannin bougies. Some months after, the patient having married and had connection with his wife, was seized with intense pain in the back part of the urethra, and on one occasion the semen was tinged with blood. This was followed by wearying pain occupying the whole of the lumbar region, which fre-

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[1] British Medical Journal, vol. ii., p. 259. 1877.

[2] Medical Times and Gazette, vol. i., p. 385. 1867.

quently radiated into the groins, hips, and thighs. It never left him, and was liable to be increased by all kinds of exercise. Then followed permanent pain in the urethra, irritability of the bladder, and occasionally retention of urine; bad appetite, imperfect assimilation, pain in the back, lassitude, tremor, frequent jerkings, pains shooting through the legs, and sense of numbness in the feet. The treatment consisted of catalectrotonus of the spine and passes with the cathode over the entire lumbar region, while the anode was placed upon the perineum to act on the painful part of the urethra. A rapid cure followed, the pain especially being quickly relieved.

Such results as these are so rare as to make their classification undesirable, and it is not quite certain that they were really due to the gonorrhœa at all; I have therefore preferred to take the case here rather than among the complications of gonorrhœa, which I need hardly say are in reality results of this disorder. Some very serious diseases, however, such as gonorrhœal peritonitis, sub-peritoneal inflammation, endocarditis, etc., which appear to be extensions of common well-known complications, will be considered further on in connection with gonorrhœal rheumatism, affection of the seminal vesicles, and so on.

Origin of Gonorrhœa from a Fungus.—As most of my readers are no doubt aware, this disease has at different times been ascribed to the operation of a fungus, and especially by Dr. Salisbury, who tells us [1] that the species which produces gonorrhœa consists of spores, which are found in pairs and sometimes in fours, and develop rapidly in and among the parent cells of the mucous membrane. These spores unite and run into filaments. He also maintains, that if this fungus be once planted in the mucous membrane, it "extends from cell to cell, if not prevented by remedial means, till it has invaded all the mucous surfaces in continuity with each other." I presume this really means, that in every case where gonorrhœa is not checked by art, it spreads to the bladder, ureters, and epididymis. I ask the reader to weigh this, and say, whether he has not often seen a neglected gonorrhœa where nothing of the kind took place. The purely microscopical view of the question is carefully considered, and I think refuted, in the first volume of the *Archiv für Dermatologie*, where also the statements of Hallier on the same subject are discussed. Long ago indeed M. Jusseaume, in his inaugural thesis defended before the Faculty at Paris, 1862, maintained [2] that gonorrhœa is due to a vegetable parasite, an alga, consisting of long filaments ten to twenty millimetres in thickness, and often curved or bent at an angle. He described minutely the changes which take place in these bodies, as also their reproductive organs, showing to what an extent self-deception may be carried by means of the microscope.

[1] American Journal of the Medical Sciences, vol. lv., p. 22.

[2] Archives Générales de Médecine, tome i., p. 353. 1863.

Micrococcus Peculiar to Gonorrhœa.—Dr. Albert Neisser, of Breslau, reports [1] that he has discovered a body of this nature which may be found by the following process. The thinnest possible layer of gonorrhœal matter having been dried on the slide, and colored by pouring over it watery solution of methyl-violet, is then examined by means of a high power with the largest diaphragm opening (mit wenigst möglich abgeblendetem Licht). Neisser himself uses for the purpose a Zeiss microscope with Abbé's lighting apparatus, one-twelfth oil immersion lens and four or five ocular, a clearer view being thus obtained than with the best immersion of Hartnack and Siebert. At the first glance may be seen, besides the dark violet blue of the pus-corpuscles appearing in the most varied shape, and revealing even their dull tinted protoplasm, a number of more or less thickly set heaps of micrococci, which have a perfectly characteristic form and can be immediately recognized.

The individual bodies composing these masses are circular, and strikingly large; they very readily take the stain of methyl-violet. They are also colored by strong solution of eosin, but do not in this state contrast so markedly with the nuclei of the pus.corpuscles, which Ehrlich indeed proposes to call eosinophilous. They are not affected by methyl-green and indulin. With objectives of lower power the micrococci are seen girdled with a ring of light, which perhaps represents a mucous envelope. They are, however, seldom met with solitary; generally we find two packed close together, so close in fact that they give the observer the impression of a single body shaped like a figure 8, a biscuit, or a german roll. The seeming diversity and multiplicity in the arrangement of these composite bodies are best interpreted by attending to the history of their development. Thus the isolated micrococcus is round, but is soon transformed into a short corpuscle of lengthened oval shape, which quickly undergoes constriction in the middle and divides into two micrococci. Up to the date of Dr. Neisser's memoir it had not been possible to say, whether the preponderance observed of micrococci of the german roll (Semmel) shape is due to the accidentally long cohesion of two individual bodies, or whether multiplication by change is so rapid that the individual is seldom seen in its isolated stage.

Finally the micrococci part company, and a small space, equal to about their own bulk, separates them from each other. Each individual body, however, speedily divides again, but this time exactly at a right angle to the first line of scission. In this way each half breaks up into two, so that frequently groups of four are met with. For the most part the micrococci agglomerate into columns of ten, twenty or more, each segregated by a mucous envelope, easily made out when the field is somewhat less clearly illuminated. In these colonies the micrococci never lie very close to each

[1] Central Blatt. für die medizinische Wissenschaft, S. 497. 1879.

other, being always kept apart by large spaces (*sic*); they are generally found on the upper surface of pus-cells, seldom on epithelial cells. Sometimes the nucleus was found wanting in certain pus-cells which were beset with micrococci; in others a distinct lessening of the nucleus could be made out, corresponding to an in-growth of micrococci on the nucleus. For all this Dr. Neisser considers that the hypothesis of these growths, depending for their existence on the destruction of the nuclei, must be summarily rejected.

These micrococci, recognized not only by Dr. Neisser but also by other observers, were found in thirty-five cases of gonorrhœa selected for examination, the date from the commencement of the disease varying from three days up to thirteen weeks; in one case of chronic gonorrhœa which had lasted eighteen months he could not find any. In general they were met with indifferently, whether the case had been treated or not; in five cases persistently treated with sulphocarbolate of zinc he could not detect any, although the secretion was very profuse.

With the exception of one case in which there was a strong suspicion of soft ulcer of the urethra, every specimen of gonorrhœal pus which he examined contained only this kind of bacteria. On the other hand, this form of micrococcus was absent in every other kind of pus examined, however rich such specimens might be in bacteria; balano-posthitis, soft sore, hard sore, bubo of every kind, whitlow, etc., yielded nothing of this sort. The micrococci were also wanting in thirteen cases of fluor albus selected at random, but were found numerous enough in the vaginal secretion of two girls, who had evidently been maltreated by a man suffering from gonorrhœa. Exactly similar typical micrococci were found in nine cases of purulent urethritis in women, also in seven cases of acute purulent ophthalmia in new-born infants, of one to six weeks' duration of the disease. In one case of fourteen days' standing, where very energetic treatment had left only a minimum of secretion, the micrococci were wanting, as they also were in every instance of simple purulent conjunctivitis. They were discovered in two cases of gonorrhœal ophthalmia in the adult.

Dr. Neisser sums up by observing that the micrococci, which he has described, offer an unfailing test of the gonorrhœal nature of affections of the urethra, as also of the eye, and thus enable us to diagnose the specific character of the discharge. There is, moreover, no connection between them and the micrococci of the urine, which are developed after a perfectly different and typical fashion in long chains and rows.

Dr. F. Weiss has verified[1] to a great extent the statements of Dr. Neisser, examining the pus with diameters of 2,200, 1,100, 1,000, and even 900, methyl-violet having answered best as a re-agent in his observations. He describes the isolated bodies as almost spherical, ten to thirteen tenths of

[1] Gazette Hebdomadaire, p. 751. 1880.

a millimetre in diameter, each being encircled by a hyaline band visibly striped; they are, however, rarely seen solitary. He found these bodies in the pus of twenty-three women and nine men suffering respectively from gonorrhœal vaginitis and gonorrhœa, but never in that of simple urethritis, balanitis, chancre, bubo, leucorrhœa, or suppurative orchitis.

I suppose it is now universally admitted that Jusseaume and Salisbury were mistaken, and perhaps this has made men rather skeptical about accepting the discovery of Neisser, for that great skepticism exists there can, I think, be no doubt; and it will not be very satisfactory to find that time has justified it, and that the microscope has at least thrice led careful industrious observers into error. For my own part I quite admit that, had I found out what any of these gentlemen did, I should have trusted to the microscope and contended for the truth of the discovery.

Mr. Watson Cheyne [1] conveyed (under certain conditions which, however, he does not specify) gonorrhœal pus into infusion of meat and cucumber. "In these flasks," he says, "micrococci grew in large numbers, and also sometimes bacteria, showing that these organisms were present in the gonorrhœal pus." He also says, alluding to Dr. Neisser's discovery, that "the presence of large numbers of micrococci in gonorrhœal pus has since been confirmed by several observers;" it will be noticed, however, that he is silent as to the question of these bodies being peculiar to gonorrhœal pus. So far as the evidence yielded by Dr. Neisser's observations goes, it points to the specific nature of gonorrhœa.

Mr. Cheyne's view is that gonorrhœa may be due to the spreading of the organisms which he describes, and then asks where these are to be found; so that both the first and second positions in his argument are purely conjectural. Probability is, he thinks, in favor of the presence of organisms in this disease, because micrococci have been found in the margin of an erysipelas patch, because gangrene of the tissues in mice is due to the presence of the streptococcus, and lastly because Professor Lister has come to the conclusion that "the organisms" are present, not only in the canal of a sinus, but in the granular tissue lining it. Having on these grounds ascended from conjecture to probability, he in the next page dismisses all doubt, for after describing his treatment, he distinctly speaks of "the specific cause of the disease being eradicated by these means." The remedies he employs are antiseptic; but in this case either all remedies which equally arrest the discharge, including such substances as water, green tea, honey, and glycerine, must be included among the antiseptics, or else the fact of the discharge being arrested must be looked upon as equally favoring any other theory. Tested by the results of practice the theory breaks down, as antiseptics have no particular control over this disease.

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[1] British Medical Journal, vol. ii., p. 124. 1880.

Varying Duration of Gonorrhœa; Connection between Inveteracy and Diathesis.—If twenty cases of gonorrhœa were treated by the same surgeon in exactly the same way, the disease would almost certainly not run the same course in any two of them, and in all probability would not be cured in the same number of days in any two out of the twenty. Very likely, too, one of the number would suffer from obstinate gleet, while one would perhaps be cured in a visit or two. Of the first of these two anomalies various explanations have been suggested. Wallace says, "gleet may arise from rheumatism, scrofula, venereal poison;" and again,[1] "such persons as labor under gleets are sometimes of rheumatic or scrofulus habit." Howard expresses himself to much the same effect. He says:[2] "It is always more troublesome in a robust sanguineous than in a phlegmatic habit. . . . And the difference of habit is still more conspicuous when a disposition to scrofula or scorbutic acrimony is joined to a young, robust, sanguineous temperament;" and again:[3] "When a person laboring under a gonorrhœa is subject to redness, tenderness, and increased secretion from the eyelids, has a thickened upper lip, or redness, tenderness, and increased secretion from the glandulæ odoriferæ, such person will probably suffer more, and be cured with greater difficulty than another who has not any of these affections, and that whether his habit be weakly or robust." Mr. Johnson thinks[4] he has observed that "they who have actually suffered from scrofula or display the characteristics of that disease are difficult to cure," and M. Robert[5] cites lymphatic temperament and scrofula as incontestably predisposing to gleet; while Fournier says that in blond and lymphatic patients the disease may remain obstinate for months. Dr. Bumstead also tells us[6] that "gleet is peculiarly frequent and obstinate in persons of a strumous diathesis;" and Dr. Dick says, "the first thing a practitioner has to do, when consulted for gleet, is to examine well his patient with respect to antecedents, to ascertain if he had a scrofulous or cutaneous affection in his early life, or has been subject to gout or rheumatism."

Of all these authors not one adduces a scrap of evidence in support of his opinions, not one says that he is prepared with cases and statistics to back up his convictions. The reader who reflects upon the question must, I imagine, think this rather strange, while it is at least equally strange that these various causes should so often produce one common effect. Gout, rheumatism, and scrofula, when they exist in other parts of the frame, run a definite course, and exhibit a definite series of symptoms and appearances, which we can usually influence to some extent by medicines. Consequently, we ought to have, among others, a gouty, rheumatic, and scrofulous gleet, amenable to the remedies which most surely act on their re-

[1] A Treatise on the Venereal Diseases, p. 283. 1838.
[2] Op. citat., vol. i., p. 211. [3] Ibid., vol. iii., p. 42. [4] Op. citat., p. 66.
[5] Op. citat., p. 128. [6] Op. citat., p. 102.

spective diatheses. Yet we cannot define or recognize any such divisions; we find no diagnostic marks pointed out by which we may distinguish one kind of discharge from another, no attempt to treat any one in the same way as a medical man would treat a case of gout, rheumatism, or scrofula. Half a dozen cases successfully managed by means of colchicum, lithia, and potass, salicylates, or cod-liver oil and iodine, would constitute a body of evidence which the most skeptical would scarcely dare to reject; but so far from anything of the kind being forthcoming, I have never seen any reason to believe that even an attempt had been made to cure gleet on such a basis, looking rather as if these gentleman had scarcely so much confidence in their own opinions as to put them to so severe a test as that of practice. It will be observed that there are irreconcilable differences among the authors themselves. Most of them agree to admit scrofula among the causes of inveteracy, but they do not agree upon any other point; the robust, sanguineous habit, assigned by Howard as a reason, is the very opposite of the lymphatic temperament which M. Robert cites.

But not merely do I dispute the adequacy of the causes enumerated by the authors whose names I have given; I must respectfully question the greater prevalence, as a rule, of a particular diathesis among the sufferers from obstinate gonorrhœa, and expressly state, as the outcome of my observations, that any such constitutional tendency, so far as it exists at all, may be seen quite as strongly developed among those who throw off the disease quickly enough. Indeed I cannot in any way accept the conclusions arrived at by these gentlemen. While solicitous to avoid saying a word that might give offence, I am compelled to remark, that the principle from which they start is essentially vicious, and that their views seem to me rather moulded in conformity with traditions long current, than upon exact statistical proof, and in order to probe the question thoroughly, I will select two or three of the factors and examine their operation.

And first as to scrofula, the belief in which, as a cause of inveteracy, is one of those vague elastic opinions which, while they have the advantage of harmonizing with current theories and modes of speaking, possess the still greater one of being so intangible that it is well-nigh impossible to deal with them as we can with an argument reduced to a definite form. It must be obvious that any one assailing so shapeless a doctrine does so at a great disadvantage, seeing that he might almost as easily attack a phantom or a ghost. Men may go on repeating such assertions in proportion as books are multiplied, till what was at first a loose statement becomes a law from which no one but a person desirous of being distinguished for his crotchets would venture to dissent; but however well such a system might suit the requirements of science, it would not bring us any nearer the truth, which is quite a different matter. To do this, we must first of all define with sufficient strictness what is really meant by a scrofulous diathesis; and then, in the second place, ascertain what proportion persons

so affected bear to the entire male population. Having agreed upon the solution of the former point, a comparison of the numbers in the latter with those of strumous and non-strumous persons suffering under gonorrhœa, would enable us, by a simple sum in arithmetic, to get at the facts of the case. But, to begin, difficulties beset the question of definition. If, as is pretty clearly the opinion of some medical men, inveteracy is in itself, even when all other signs are absent, to be looked upon as decisive testimony that the patient is of this temperament, I give up the point. There is no arguing against such a faith. It is weighing the wind and counting the sands to spend time upon a creed like this. If the term be narrowed to those cases in which we find the accepted and unmistakable marks of scrofula I can meet it, and I say at once that it does not in any way harmonize with my experience to find inveteracy associated with visible signs of struma. Considering that struma is by no means such a very rare disorder, it is not to be wondered at if we occasionally see gonorrhœal patients suffering from it. A scrofulous person exposes himself to infection the same as a healthy man does, and pays the same penalty.

Many years ago, in some remarks on this question, I stated that I had entirely failed to connect inveteracy with scrofula. Since then I have seen a pretty large number of obstinate gleets, and have rarely, on a single occasion, omitted to question the patient carefully as to the possible reasons for the persistence of his complaint, *without*, except in the instances to be presently mentioned, *finding evidence of the strumous diathesis.* I never could trace anything of the kind. One patient, who was also the subject of abscess in the perineum, had, in early life, been afflicted with scrofulous ophthalmia of the eyelids. The patient, whose rheumatic affection was complicated with inflammation of the conjunctiva, was described by his medical attendant as having a scrofulous disposition; but the opinion seemed to be based on the fact that the ophthalmia continued to resist the treatment employed, and that the patient was thin and pale. All the others seemed quite as healthy as the average of men, and presented every variety of temperament, nor was there a single sign by which the presence of scrofula could be recognized. The patient spoken of later on as having had gleet nearly thirteen years was a remarkably tall, straight-limbed, well-made man, with a mixture of red and brown in his face that betokened the best of health. One man who had had gleet twelve years was a powerful person quite six feet high. A patient, with prostatic gleet of more than twenty years' standing, was a compact, square-set man, wearing every appearance of health and strength. One gentleman, a famous runner, also a picture of health, always had gonorrhœa, when he was unlucky enough to contract it, in a most obstinate form. Are we then, with such facts as these before us, to accept the creed that inveteracy must mean scrofula?

In the same way I would deal with rheumatism and gout. I suppose we should scarcely err in saying that two persons at least out of five suffer

more or less from rheumatism, and in that case we cannot be surprised at finding forty patients out of every hundred to be rheumatic. If the first part of the calculation be erroneous, that only proves more strongly the need of such a preliminary inquiry as I have just hinted at. As to gout, I could not make out anything to my satisfaction. In the obstinate case of prostatic gleet spoken of as lasting more than twenty years, the patient said there was a history of gout in the family; but I suppose half the educated people in England might say the same thing; and I know that I have cured, and very easily too, patients suffering under gonorrhœa and gleet who did say the same thing, as I have done with patients not only liable to rheumatism, but actually rheumatic at the time they contracted the affection. On one occasion I treated, for bad urethral discharge, a patient whom I had not long before injected six times with morphia by means of the hypodermic syringe for severe rheumatism. Yet his case did very well and showed no signs of obstinacy. A medical man, who consulted me for a long standing gleet, unhesitatingly put it down to his father having gout; but it seemed to me that if such were the case, then every son of a gouty father, if he catch gonorrhœa, ought to have gleet in a rebellious form, which does not happen. Subsequently this patient had very bad rheumatism for three or four years, and then I wondered which of the two agents was now to be blamed.

As to temperament, I have already said that the patients laboring under rebellious gleet presented every variety of it, and having at least twice previously given my reasons for distrusting the coarse formulæ by which its varieties are to be distinguished, I trust to stand excused for not repeating them here. Such a method of parcelling mankind out into sections may have its advantages. For my part, I at once confess that I have never been able to see them, any more than I have the bearing of temperament upon the enigma we have been discussing.

Supposing any one of the theories I have been enumerating were correct, how are we, by means of it, to explain the varying severity of gonorrhœa at different times in the same person? what light does it cast upon the problem of one attack of the disease being more obstinate than another in the same individual; of the second being worse than the first, or the third worse than the second? Are we to assume that, on these less favorable occasions the diathesis is in the ascendant, and that its malignant influence, after a lull, is again permeating the patient's frame? And if a diathesis be the cause of inveteracy, on what principle are we to account for the peculiar mildness gonorrhœa displays through every successive attack in some persons; on that of such favored mortals having an antistrumous diathesis? The reader may think such a question frivolous, but I put it with no such meaning attached to it. If there be any truth in the theory that obstinacy is due to diathesis, then marked exemption from obstinacy must mean marked exemption from that diathesis. If there be

any foundation for the theory it merits examination, but for an examination to be of any value it must embrace both sides of the question.

To all objections of this nature the constant reply is, that some explanation must be suggested, and that even a very erroneous or fanciful theory has sometimes prompted men to further inquiry, and thus opened the way to truth. I must entirely dissent from such a doctrine, preferring to admit that I am only stumbling blindfold through a maze of conjecture, and have not reached even the threshold of inquiry; and doubting very much whether an erroneous hypothesis ever yet assisted in the discovery of a truth which men would not have found out equally well without it.

CHAPTER III.

TREATMENT.

Variety of Remedies Recommended.—Gonorrhœa has been successfully treated with purgatives and diuretics, corroboratives,[1] astringents and laxatives, demulcents and alexipharmics, mercury and iodine, acids[2] and alkalies, anæsthetics,[3] tonics,[4] specifics, and treatment on general principles; so that the puzzle must be, not to find out what will cure it, but what there is in the wide domain of therapeutics that does not possess this power. An old author complains that the specific for this disease had not yet been found; had he lived in the present day, he might have lamented that there were rather too many, always supposing we are to put faith in what we are told about some of the medicines recommended. As to injections, the variety is quite as great, at least eighty different substances and combinations having been recommended for this purpose within the last few years. External applications do not offer the same scope for diversity, yet it can scarcely be said that they have lagged much in the rear. If their narrow bounds do not admit of much choice, they leave the way open for sufficient difference of opinion as to the mode in which they are to be applied. Maceration for five or six hours in a hot bath has been strongly recommended, while Ricord and some of the French surgeons tell us that the hot bath, even in the usual form, is highly calculated to develop gonorrhœa; authors have even gone so far as to interdict it. Some practitioners apply evaporating lotions to the penis for the purpose of reducing the inflammation, perhaps it would be more correct to say, in the hope of doing so; others have resorted to ice with the same view. Men with views opposed to this treatment sedulously caution the patient to avoid anything in the shape of cold getting to the part, or even sanction the use of india-rubber bags, which, though they prevent the linen from being stained, keep the organ hotter than the bath would do. Swediaur carried prudence so far as to deprecate making water in the street when there was a cold wind blowing.

It is gratifying to find that, with all this warfare of opinion, we are

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[1] Swediaur: Op. citat., p. 65.

[2] Essays on the Venereal Disease. By William Blair. Pp. 36, 72, etc. 1798.

[3] Archiv für Dermatologie, B. S., 593.

[4] Lancet, vol. ii., p. 428. 1870.

really making progress, and that we cannot only cure the disease in many different ways, but cure it with a rapidity which leaves the feats of past days, and the most audacious assurances of quackery, alike in the background. Our fore-fathers were content with removing gonorrhœa in a week or two, and the boldest charlatan, who undertook the same task, required a few days to do it in. But now we have remedies which cure the disease in nearly ninety per cent. of the cases at a single sitting, leaving the impartial reader quite at a loss to know why we ever meet with bad gonorrhœa at all, and why every patient who may happen to catch it does not insist upon being treated according to one of these speedy and infallible methods.

Continuance of the same Fundamental Principles of Treatment.—What may, I think, be called the fundamental principles of treatment, of that treatment which is most largely adopted in each successive age, have, excepting the use of injections, changed less amid all this disparity of opinion during the last century or two than might be supposed. The handling of the subject is more scientific, but possibly not so much more likely to promote success, the grand test after all. The vague and elastic rules of treatment laid down in text-books and dictionaries, the want of tangible proof as to the proportion between cure and failure, mean, in plain words, old results in a more modern dress and phraseology.

Judging from what I see and hear, treatment is rather regulated by the impression some striking case of cure or failure has made at the outset of the surgeon's career, or by the views some favorite teacher or eminent specialist may have inculcated, than by conclusions drawn from long and carefully watching the action of medicines. If this be the case, then I think matters have gone on long enough in this way to excuse me for saying, that there is no cure for the uncertainty in the present state of things, and that the remedy would be a more full study of the therapeutics of the complaint, even supposing we had for this purpose to exclude many interesting points in etiology and pathology, coupled with a system of observation on a simple, uniform plan, *which dealt only with certainties, which admitted no case as cured or uncured unless the surgeon saw it for himself*, and where the history comprehended the beginning and ending of the disease. But of such a step I have no hope. The tendency of the age is to exalt scientific experiment, however useless it may be, *and to pass by the teaching of experience*, as if to gather these did not demand as much toil and self-sacrifice as the other. One consequence of this is that time is spent on experiments which settle nothing, while we cannot get at data for establishing rules of treatment. In support of this statement let me ask the reader to take any of the more recent works on venereal diseases and to compare what is said on the management of gonorrhœa, especially the part contributed by the author, that is to say what is new, with the bulk of the section on this disease. I think he will admit that I have not over-

colored matters in saying, that the treatment is made quite a subordinate question to those of causation and pathology.

The point appears to me of so much importance, that at the risk of appearing ever so tedious, I will take an instance of the vagueness of the rules laid down by our teachers. I select it from the writings of an eminent surgeon, the late Sir William Fergusson. He tells us that gonorrhœa must be treated on *general principles*, and that, though it must be admitted that the disease is now and then cut short by an astringent or caustic solution, it is more the result of *chance than judgment;* and in many instances, where it has been supposed that this was the case, gonorrhœa has in reality not been present.

This is all *en règle;* but what a picture of uncertainty, what a maze of doubt it reveals! How much better it would be to say at once to the pupils: "Gentlemen, you must first of all check the inflammation by antiphlogistics—not that I ever convinced myself by experiment that these remedies have any power to effect this purpose, but because so many excellent authorities have insisted upon their efficacy. Perhaps they knew no more about the matter than you or I do; however, that is no business of ours; the orthodox plan is to pay them due respect, and quote them on all fitting occasions. Then if you think it right, and I have no rule to offer you, specifics may be given; they may cure the case, or, which is just as likely, do no good. I use the phrase general principles much as it has always been used, without attaching any very distinct meaning to it; and must admit that, if pressed for a strict definition, I might feel rather embarrassed. As to injections, I cannot say that I have myself seen an instance in which stricture, abscess, or swelled testicle resulted from them when properly given, even in the acute stage; but then the authorities I have consulted very naturally dread the result of imprudent haste. If these remedies fail, you must use your own discretion about trying others. When you have exhausted your stock, send the patient to the sea-side, or anywhere else, so long as you only get rid of him. Do not worry yourselves about failure. You have done everything sanctioned by the legitimate practice of surgery, and have therefore nothing to reproach yourselves with."

I am continually asked if I have tried some new remedy—the specific of the day—to which I simply reply, that I am very glad to try anything recommended upon good grounds, anything that holds out the hope of exhibiting greater curative power than is possessed by the remedies I know; but that I entirely object to wasting the patient's time and my own; to running the risk of causing him unnecessary suffering, and reaping for myself only discredit and vexation, for the purpose of testing the virtues of any novelty, unless these are supported by the history of a sufficient number of well-observed cases.

There may be too much of a good thing, and I think we have had too

much in the shape of novelties for many years past; merely adding to the list of remedies, already long enough, many of which are just as useful as a "beane putte into ye harte of a black cat," can do no good whatever. Any simple remedy and mild injection will cure most cases of gonorrhœa. One or two of these may be found every year in some of our medical repertories, and a reader, tempted to go into the literature of this subject, might be interested and amused to see how many are periodically introduced as though they had never been heard of before. Those fond of new modes of treatment are therefore able to gratify their taste; but unless it could be shown that the newly discovered specific really cures *more* cases out of a given number than the remedies every person is familiar with, or is specially adapted to a particular class of cases which can be diagnosed at the outset, its introduction would merely add to the existing confusion. I therefore propose to examine only those which seem exceptionally entitled to notice.

It is perhaps this incessant supply of novelties that has rendered men so inattentive to the few improvements which have been suggested in the treatment of gonorrhœa, such as the addition of long tubes to syringes, the use of *fresh-ground* cubebs suggested by Mr. Norman,[1] and the separation of the effete and nauseous parts of copaiba from the more useful constituents by Mr. Thorn.[2] The discoveries of Mr. Norman and Mr. Thorn may have been useless. I have had no opportunity of making such observations as to enable me to form an opinion, and therefore offer none. What I have to deal with is the total neglect shown by the medical public on both occasions. Judging as well as I can, I should say it is much more likely that they were of value; there was quite evidence enough in their favor to have recommended them to the notice of medical men. Yet they were honored with no more attention than if they had belonged to the class of trashy and ephemeral papers on such topics so often seen in our journals. Mr. Thorn's preparation was carefully tested by the late Mr. Tyrrell, and found most efficacious. Yet his work was received with so much coldness, that he soon after threw up the subject in disgust, and left England in consequence.

It was represented to me that a work of this kind would be incomplete without a history of the treatment of gonorrhœa. The suggestion is no doubt founded on a correct view of the case, but on going into the literature of the subject, I found that to execute such a plan thoroughly would carry me too far. Besides, after all, a history of this nature would be more amusing than instructive. It might be made to present a curious picture of bygone times, but it would convey little real information; for it must necessarily be a narrative of the same principles of treatment, re-

[1] Lancet, vol. i., p. 631. 1856.

[2] On the Treatment of Gonorrhœa by a new Preparation of the Balsam of Copaiba. 1827.

curring again and again under almost countless changes of form and authorship.

The reader was probably startled by an observation in one of the preceding paragraphs, viz., that treatment had not altered so much in the last century or two as might have been expected; yet there seems no other conclusion to arrive at. It is true the outward form, the husk, so to say, has somewhat changed; prescriptions are less complicated, medicines are given in milder doses and rather less nauseous forms. The language of medicine is no longer what it was, and old terms and old formulæ have died out, while new ones have sprung up; but beneath all this the essence of both practice and theory has remained much the same. The discrepancies of to-day are but amplifications of those which prevailed when Howard commented on gonorrhœa "having been so often cured in a great variety of different ways." In this instance we might say of medicine as of language, that while the outer semblance is in a state of perpetual mutation, its radical structure undergoes but little change.

With the reader's permission, I will endeavor to illustrate this by means of a few instances, beginning a little later than the middle of the seventeenth century with the famous Sydenham.

Sydenham's Treatment.—Although this great man separated the treatment of "gonorrhœa virulenta" from that of venereal disease, he never discovered that there was a fundamental distinction between the two. He describes gonorrhœa as beginning with "an uncommon pain in the parts of generation and a kind of rotation of the testicles," while in those who have not been circumcised, "a spot not unlike the measles appears on the glans;" then the discharge from the urethra comes on, and "when this disease is more virulent and degenerated into the pox," "this matter becomes green, and is mixed with a watery humor streaked with blood." The description is anything but full and clear; indeed, were it not by so eminent a person, I should say it was as bad as it could be.

The first thing that strikes us in Sydenham's treatment is a feeling of astonishment that he did not kill a good many of his patients, or give them bleeding piles, tenesmus, and excoriation of the anus. Possibly, like Howard,[1] he looked upon the occurrence of piles as rather a favorable incident, calculated to "draw off irritation from the urethra." He directs[2] "three drachms of cochia (colocynth) pill, a drachm of extract of rudius, half a drachm of resin of jalap, and half a drachm of resin of scammony," with "sufficient of opobalsamum"[3] to make them into a mass. Of this

[1] Practical Observations on the Natural History and Cure of the Venereal Disease, vol. iii., p. 26. 1787.

[2] The Works of Thomas Sydenham, vol. ii., p. 453. 1788.

[3] Balm of Gilead, procured from the Balsamodendron Gileadense, one of the Terebinthaceæ. Physiological effects similar to those of copaiba and the turpentines. Disused in Europe.

mass two scruples, in the form of *four* pills, were to be taken *every morning*, till the running had grown considerably paler and the scalding abated; I fancy the patient must often have grown paler under such handling. Those who were "hard to purge," and I should say they must have been decidedly "hard" when their intestines resisted snch a stimulus, were directed to take, in addition, his "purging potion" now and then, with two drachms of the syrup of buckthorn and the same quantity of the electuary of the juice of roses. If the cure went on slowly, eight grains of "turbith mineral" were given every five days, or half a drachm of "pills of two principal ingredients" and a scruple of "sweet mercury" made into a mass with opobalsamum; not a bad dose. In addition to these remedies he gave opobalsamum in doses of twenty-five drops every night, or "the quantity of a hazle-nut of cypress turpentine." Sometimes he gave every second day half a drachm "of the pills of two principal ingredients," and three drops of opobalsamum. He also gave half an ounce of Venice turpentine occasionally in a clyster. The patient was also to be "blooded" once or twice toward the middle of the course: rather a bold step, for generally speaking men at that time dreaded the idea of venesection and antiphlogistics, for fear of inducing absorption of the peccant matter.

Sydenham used also to order his patients a "cooling or thickening diet," one item of which was "emulsions of the four greater cold seeds." For swellings of the penis or testicle he advised elaborate fomentations of marshmallow, white lilies, mullein, elder, camomile, melilot, flax and fennel seeds, for the particulars of which I must refer the reader to his works.

Supposing the drugs used in Sydenham's time were pure, we must believe that his patients had greater powers of endurance, or more faith in their physician, than those of the nineteenth century. A scruple or half-drachm dose of such pills as he prescribes would produce a rather startling effect on a patient in this degenerate age, and nowadays the "turbith mineral" (the yellow subsulphate of mercury) causes vomiting of the most violent kind in half the quantity prescribed by Sydenham.

I now proceed to examine the practice of a somewhat later date, selecting as specimens Moyle, Marten, and Turner.

Moyle's Treatment.—Moyle directs[1] his readers to purge well for the running, but not to give anything to stop it, "lest it mingle with the Blood, and so become a confirm'd Pox;" and not to bleed, for the revulsion thereby occasioned "makes for the malign Atoms or Fumes to ascend from the Pocky ferment in the Inferiour parts and teints the blood in the Superiour." His purgative consists of pil. rudii ℈j.; resin. jalap. gr. v.; ☿ dulc. gr. x.; every second day for five times. The patient is to "forbear strong liquors," and when "the Malignity is carried off" he is to take

[1] The Sea-Chirurgion. By John Moyle, senior, one of Her Majesty's Ancient Sea-Chirurgions. 1702.

two drachms of cypress turpentine in an emulsion night and morning "for five times going." This generally cured the patient, but if a "Gleeting" remained he was to purge again.

Marten's Treatment.—Marten belonged to quite as rough a school as Moyle, but one evincing a much lower grade of professional feeling; for the old "sea-chirurgion" is honest and open, whereas Marten kept his remedies to a great extent secret. He is communicative enough about some of his affairs, such as the presents sent to him by grateful patients, the premium which he received with his apprentice, the price for which he sold his "general Business," or his benevolence in curing the poor gratis,[1] but the reader is left in the dark as to his real treatment. He says, with an air of innocence which might well call forth a smile, in speaking of some infallible liquor, "But what this Liquor is or how it is to be prepared, the Reader, I say, must pardon me at this time that I do not reveal." Indeed, the surgeon of that day, albeit he might boast of belonging to the "Worshipful Company of Barber Chirurgions," or stood at the top of the tree in some specialty, was often little better than a mountebank or fortune-teller. The most arrant empiric was much on a par with his diplomaed rival. A regiment of the first class was handed over to one charlatan; the pills of another were sold at a guinea a dozen; nobility and even royalty availed themselves of the vaunted skill of a third; and the public here, at any rate, openly sympathized with any man who professed to wage war against chartered monopoly. Sir William Read, the queen's oculist, had been a mountebank.[2] He was so ignorant that he could hardly read,[3] and even after his appointment continued to sell nostrums. Dr. Thomas Saffold, spoken of in the *Tatler* as "my ingenious friend," had been a weaver and a fortune-teller before he became undergraduate in physic. The infamous quack, St. André, the associate of the notorious Mary Toft, was, in 1726, chirurgeon to the king's household.

To quote almost literally from Marten, when a man, a Mohawk for instance, or a "looser sort of Spark," had "conversed with a Slut," and had caught "a pocky Running," with "a Stupidity of the Yard," he came to the conclusion that he was "inflicted with the Pox," and sent for his medical man, who forthwith came in a mighty periwig, and after a preliminary railing at the "Quacking Empiricall Fellow" in the "Dark Entry," or at the sign of "the Hand and Urinal," or the "Frying Pan;" diversified, it may be, with a warning narrative of some "Gentleman who was blowed up to the Planets," owing to his having taken too strong a dose from one of these worthies, he proceeded to strike a bargain with the patient as to his terms for effecting a cure, and this done he set to work.

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[1] "The poor I cure gratis, no less I believe than to the value of £100 per Ann., discharging both to Poor and Rich, as near as I can, an honest conscience."—A True and Succinct Account of the Venereal Disease. By John Marten, Chirurgion. 1706.

[2] The Tatler, vol. i., p. 84. 1797.

[3] Ibid., vol. iv., p. 218.

Marten's practice consisted "in cleansing and destroying the Malignity," in giving "gentle Specificks, appropriated suitable to the Distemper." For "Scalding of Urine" he gave "two or three quarts a day of proper Liquors," which "radically extinguished and destroyed the very Seed of the Disease." He had a great horror of stopping the discharge by "Emplastics and Restringents," lest by using them "the Venereal Malignity absconding itself in the Liminary or Spermatic Parts," might degenerate into "a radicated and ill-contrived Pox," or "a Tumor Humoralis happen upon the testicle." But how he effected all this I leave to be explained by those who can gather anything definite from his book.

Has the reader ever heard this theory about purging off the malignity, not stopping a discharge lest it might be absorbed, or be thrown into the system, or something of that kind, repeated under another form in the present day?—because if not, I have, and very frequently too.

Turner's Treatment.—Turner clearly separates[1] gonorrhœa from syphilis in so far, that while he admits the possibility of a neglected or badly treated blennorrhagia being transmuted into syphilis, he carefully points out that it may run, or rather that it naturally runs, its course without anything of the kind happening. The treatment of gonorrhœa is accordingly kept tolerably distinct from that of the more serious disease, or, as he quaintly terms it, "the second Infection called the Pox."

His treatment consisted of purgatives given perseveringly till the more severe symptoms had passed off, or, to use his own words, till "the Cacochymy was discharged," and "the Stillicidium was lessened in Quantity and had grown better conditioned." He began with "Ext. rud.," "Pil. coch. min." or "Pil. ex duobus," ℈j. to ʒ ss. of the latter, or, if the patient were strong, ℈ij. along with ℈ss. gr. xv. or ℈j. of calomel. After this he gave powdered rhubarb with some preparation of turpentine, and followed these up with copaiba, on which he placed great reliance. Injections he avoided, except very mild ones, such as barley-water, "a small solution of the Troch. Alb. Rhus in aq., Plantag. vel. Ros.," or "a small Aq. Calcis c. Syr. de Ros. sicc. vel Mel Ros." For phimosis and paraphimosis he recommended that "the Humour should be revulsed by an Emetick," and that "a good discutient Fotus should be apply'd to breath out the impacted Humour." Scalding he tried to alleviate with sedatives, such as poppy and hyoscyamus and "edulcorants," *e.g.*, gum arabic and milk of almonds. When chordee was present he added five-grain doses of sugar of lead and the same quantity of camphor for painful micturition. His remedies for orchitis were "a suitable Bag Truss" and warm cataplasms, at the same time directing that "all Restringent or Balsamic Medicines be entirely forborn." For the sympathetic bubo of gonorrhœa he had no separate treatment.

[1] Syphilis: A Practical Dissertation on the Venereal Disease. By Daniel Turner, of the College of Physicians. 1717. This work contains, in accordance with a good old fashion, a well-executed likeness of the author.

Turner was evidently a sound, careful physician. He held that the way to improve treatment and gain a better knowledge of disease was to study symptoms and observe the action of medicines. "The new way by Arithmetic, Algebra, and Elementa Mathematica!" he considered only fit to amuse young heads, and fill them with what he plainly calls "gibberish." According to him gonorrhœa, like syphilis, arises from an unknown infecting property in the discharge of the person who communicates it, "a Poison of a peculiar Nature, and acting upon the Blood and Humours of humane Bodies." Treatment he therefore thought must be, for the time being, empirical, and he counsels the reader to "take his Indications chiefly, if not solely, a juvantibus et lædentibus."

Cockburn's Treatment.—Cockburn seems[1]—for he words his opinions here very obscurely—to have used "Purging, Astringent and Healing Medicines," such as turpentine with lemon-juice and sugar, opobalsamum, Peruvian balsam and copaiba, along with rhubarb, acetate of lead, pulp of cassia, syrup of marshmallow, and sal prunella. He had great faith in purgatives and injections, though he believed that the improper use of the latter might bring on "the Lues." He held that diuretics effected a "mere washing of the Urethra," and were apt to be very injurious by causing too great "an Afflux of Humours to the stimulated Part." To relieve scalding, the volatile salt of amber, sugar-candy in tincture of tea, or whey, along with crystal mineral, nitrate of potass and tragaçanth, remedies perhaps as useful and pleasant as most of those used nowadays for this symptom; for "Cording of the Penis", cold bathing and internally warm milk, sugar of lead, white lily root, etc. He treated phimosis, which he thought only merited the title when the "Choaking of the Præputium" gave pain, with a vast variety of remedies, such as bryony, and thought the method which prevailed in his day, of draining the water from the foreskin by "insinuating green Gentian Roots, the pith of the Wayfaring Tree, or a bit of Sponge between the Glans and Foreskin" was bad; a view in which my readers will possibly concur.

Astruc's Treatment.—We now come to the practice of an author whose views seem to have been pretty extensively adopted in England, where surgery had been getting on slowly; for Mr. Pott tells us, that when he began his studies, a little before the time that Astruc's writings began to be known here, there was not, with the exception of Cheselden, Wiseman, and Sharpe, "an English writer on surgery fit to be read," and that no lectures were given in London "on the Materia Medica, Chymistry, or the Practice of Physick." Perhaps it was a deep sense of contrition for their shortcomings in this way that impelled the surgeons of that day often to weep disconsolately at the bedside of their patients! Disgusting as such an ex-

[1] The Symptoms, etc., of Gonorrhœa. By W. Cockburn, M.D., Fellow of the R.S., etc. 1728.

hibition must seem now, it appears to have been quite a common occurrence in Mr. Pott's time, for we are told, as a striking instance of his uprightness, that "he never would consent to whine over a patient!"

Astruc's general plan seems[1] to have been in the first stage to bleed, give ptisans of cooling plants, such as chiccory, wood-sorrel, lettuce, etc. When the bowels were to be moved he gave the ptisan in the form of a glyster, with a drachm or two of "Crystal mineral or an ounce of fresh pulp of Cassia." He poulticed the perineum with "crumb of bread, milk and Saffron," and injected into the urethra "Saccharum Saturni in Frog-spawn water," or "Goat's milk diluted with a decoction of Marsh mallow." He gave "Camphire and Saccharum Saturnum" internally "to asswage the heat of the parts," and prescribed a "light moist diet," with absence from all peppered or preserved meats.

In the second stage he "purged gently" with cassia, or gave ten or twelve grains of jalap or "Diagridion," possibly an old name for scammony, or a scruple of calomel, which I should think must have purged very gently indeed, though it was certainly quite a common dose in those days. This was followed up by mercurial inunction.

In the third stage, that is to say when the dysuria, erections, etc., had passed off, he gave "Chio Turpentine," powdered rhubarb, and copaiba or Canada balsam in moderate doses, accompanied by a host of other remedies, among which we find nine astringents, such as catechu, dragon's blood, etc., to be taken internally. Mucous gleet he treated with "detersive" injections of decoction of bugloss, geranium, etc., mixed with solution of honey of roses.

In the "œdematous kind" he bled less, purged repeatedly and freely, and gave a sudorific ptisan of guaiacum and sassafras woods. When there was much phlegmon he ordered frequent bleeding, with diluting, softening, and anodyne medicines.

For the Venereal tumour of the testicles, or the Venereal Hernia (orchitis), which he warns his readers may degenerate into schirrus, sarcocele, or cancer, he bled, gave aperients, laid aside all astringent and "repelling" medicines in favor of warm sedative applications, such as decoction of marshmallow or lily roots, henbane, etc.; when the pain was severe, he prescribed narcotics internally, such as laudanum, "Tinctura Anodyna," or syrup of diacodium, "in a convenient dose." He recommends that an attempt should be made to relieve the hardness of the testicles by mercurial inunction, or the application of emplastrum Vigo; the testicle was also to be supported. When abscess of the perineum threatened, he ordered cooling ptisans, cooling and anodyne fomentations of bear's breech (branca ursida), with clysters of quassia and some anodyne. In a stillicidium it was, of course, necessary "to correct the acrimony of the semen,"

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[1] A Treatise on the Venereal Disease, vol. i. 1737.

and this was effected by means of softening remedies, such as "cooling broths and apozems," after which the relics of the ulcer were to be deterged with "vulnerary" and balsamic remedies.

Hunter's Treatment.—Hunter thought[1] the soothing plan the best at the beginning. When the violence of the symptoms had abated, astringents might be employed. He considered diuretics had their advantages, and that injections might be used. He employed as an injection, corrosive sublimate, one or two grains to an ounce of rose-water, also opium and lead as soothing injections. He doubted the power of "the vegetable mucilages" to remove scalding. He seems to have made little use of internal medicines, and not to have had much faith in them. Possibly he was too much occupied in his vast anatomical and physiological researches to have had time to establish any fixed principles of treatment, even in his own mind.

Howard's Treatment.—Howard, the confidential assistant, as he puts it, of Percival Pott in his "large general business," gives[2] a very careful account of the practice of his day, as also of that for a considerable space of time previous. He draws attention to *the great discrepancy of views as to treatment*, and remarks that *gonorrhœa "has not only been frequently but successfully treated in many different ways."*

Howard bled[3] in almost every case, leeched when there was much inflammation, kept the bowels moderately open, recommended warm baths, opium, and a cooling and well-regulated diet. He considered the period following the decline of chordee the proper one for administering mercury. If the irritability of the membrane did not diminish he gave bark; he also speaks in favor of blistering the perineum. Cases treated in this way rarely required balsams, such as copaiba, turpentine, colophony (pix græca), mastic, and so on. For orchitis the horizontal position, and suspension of the testis, with cooling applications of lead. Inflamed prostate was to be met with antiphlogistic treatment. Perineal abscess was to be freely opened. He dreaded injections at the early stage, lest, "by smothering chancrous infection for a time," they might produce "future symptoms of lues," or stimulate metastasis. Perhaps the reader has heard this kind of thing about injections from men of a later school than Howard. According to this author Pott used injections freely.

Foot's Treatment.—Foot injected[4] with a preparation of blue vitriol precipitated by means of lixivium tartari, the precipitate being subsequently dissolved in a saturated solution of volatile sal ammoniac. This was used of a strength of five grains to an ounce of water. With it he gave daily one grain of calcined mercury and half a grain of opium. If the inflammation extended along the urethra, he advised soothing applica-

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[1] Op. citat. [2] Op. citat. [3] Ibid., vol. iii., p. 51.

[4] Origin, Theory, and Cure of the Lues Venerea. 1792.

tions, such as constant injections of warm milk and water with the application of the steam of hot water. He thought no method protracted gonorrhœa so much as giving purgatives. For gleet, to which term he allows a pretty wide latitude, he prescribed bark, steel, the cold bath, and injections; if these did not succeed, copaiba was to be taken. Chordee he seems to have left pretty much to time. For phimosis, poppy fomentations and poultices containing spirit; internally, calcined mercury. If in this complication the fever ran high, the patient was to be bled and to take antimony. For swelled testicle he counselled rest, lotions of liquor ammoniæ acetatis, etc. If the running did not return, and the testicle continued to swell, he resorted to bleeding, leeches, fomentations, etc.; giving at the same time mercurius calcinatus, opium, and small doses of antimony.

Sir Astley Cooper's Treatment.—Sir Astley Cooper purged his patients freely with salts and senna, calomel and colocynth. He gave carbonate of potass or soda as a drink, or liquor calcis. He recommended warm bathing of the penis; he also prescribed liquor potassæ with conium in camphor mixture. When the inflammation had subsided, he ordered balsam of copaiba with injections of sulphate of zinc and liquor plumbi. If the disease had existed some little time when he first saw the patient, he gave balsam of copaiba at once. He also gave cubebs when the inflammation did not run high; and it appears from his account that this medicine was so little known at that time, that Cooper had never heard of it till a patient brought him some to try. Yet it was used in London nearly six hundred years ago, a toll on every pound of it carried over London Bridge having been levied as far back as 1305.[1] In old-standing cases he passed bougies.

Sir Astley had the courage to say that the man who gave mercury in this disorder deserved to be flogged out of the profession, and to stigmatize in the strongest way the practice which then prevailed at Guy's, of sending every patient affected with gonorrhœa into the foul ward, where he was pretty sure to be drenched with mercury.

Judd's Treatment.—I have not been able to make out on what principles Mr. Judd treated his cases, or what he considered to be the most useful remedies. He sometimes gave[2] calomel and colocynth, with fifteen-grain doses of extract of cubebs, sometimes injections of nitrate of silver, ℈j. to ʒj.; in other cases tincture of muriate of iron as an injection, with sulphate of magnesia internally, and again in a third case a zinc injection gr. x. to ʒj. He also prescribed, in combination with purgatives, essence and balsam of copaiba and essence and spirit of cubebs, without assigning any reason for the variation, except such as his readers can make out from the history of the case, which, so far as I can see, throws no light on the point.

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[1] Pereira's Elements of Materia Medica, p. 754. 1840.

[2] Op. citat.

From this time forth it gradually grows more impracticable to give such an analysis as shall faithfully reflect the views of those, who might naturally be supposed to represent the leading opinions in matters of medicine. The subject has become too bulky to allow of anything like a full account in any ordinary work, and incomplete reproductions are worse than useless. What I have to say of their views may, I think, be more fittingly appended to the remarks on the different remedies used for this disorder. At one time I purposed examining the various plans of treatment adopted by modern authorities in gonorrhœa ; but I soon found it was impossible to carry out this idea, for as many of them are exactly alike in great part of their details, the same arguments would require to be urged each time the separate elements of treatment came to be discussed. In the interval between the date of Judd's work and the present time thirty-five methods have been recommended to public notice ; and I am speaking here, not of mere suggestions in some journal, founded perhaps on the evidence of two or three cases, or of some novelty in the shape of a new injection, but of more or less complete systems of both internal and external therapeutics, most of them taught by men of great experience and ability, attached to important, often special, hospitals, and enjoying large practices. Many of these methods, it is true, resemble each other strongly, such divergence as there is relates chiefly to matters of detail, but others again differ so widely that it is not easy to understand how the same disease can be cured by means so opposite. Let any one contrast the plan pursued by Kuchenmeister [1] with that laid down by Fournier, that of Prettyman or Dupouy with that of Ricord, the method of Gamberini with that of Bumstead, and say if such diversity as the subject admits of can well be carried farther.

These methods embrace, as may very well be supposed, most of the means yet recommended against this disorder. Treatment on general principles, unbounded reliance on specifics, combinations of the two, local treatment now elevated to the first rank, now subordinated to medicines or just tolerated under protest. Yet from all this collision of views, from this vast aggregate of experience, not one fixed principle, one single general rule of treatment can be deduced, not one unerring clue to guide the practitioner an inch on his path ; out of the many items of which these various systems are composed, not one can be found respecting which the observations of one author are not refuted by those of another. If amidst these conflicting views we could find some secure basis for drawing conclusions, if an analysis of each separate system would place us in a position to ascertain *how many cases are cured by it out of every ten or every hundred subjected to it, and in what space of time*, we might arrive at some definite opinion ; as it is we are left to infer that each surgeon is equally satis-

[1] Deutsche medizinische Wochenschrift, S. 305. 1880.

fied with his own plan, and that all these various modes of treatment are equally successful. Whether the surgeon uses injections or not, whether he give specifics or treats on general principles, seems a matter of indifference; methods diametrically opposed to each other conduct to one common goal. The proper mode of giving the same medicines, and the account of what follows from employing the same treatment are quite as conflicting. I suppose no one who has read the works of the two authors can doubt that Mr. Acton borrowed his treatment chiefly from M. Ricord, and intended his readers to understand that it never failed. M. Fournier's view of therapeutics agrees very closely with that of his illustrious master; but the two last famous men tell us that failure is but too frequently the result with them; that only too often they find they can do no more, and then they say the secret is to try to do nothing.

Here, then, we find irreconcilable difference of views about the most simple facts, and ever-recurring conflict of opinion. I suppose it is a natural and therefore inevitable result of the different constitution of the human brain, Nature having designed that men should no more exactly think alike than that they should exactly resemble each other in features; and there is nothing left for us but to conclude, that were a perfect system of medicine established to-morrow, it would at once be assailed more or less actively on all sides until it had been overthrown. Nor is this tendency in any way peculiar to any given state of our art—to any particular era. Possibly it may become more developed with greater cultivation of medicine. Lord Bacon well observes, that "empirics and old women are more happy many times in their cures than learned physicians, because they are more religious in holding their medicines," and I am inclined to think that multiplicity here proves something in favor of his assertion; or, at any rate, that if physicians nowadays treat gonorrhœa better than empirics, the system is still subject to that fatal defect which in Bacon's day often reduced their skill to the level of that of old women, and which is still such a source of weakness—a constant desire to try new remedies and other systems without sufficient grounds.

How we are to deal with those authors who give no opinion on the point I am at a loss to make out; I suppose they too are satisfied with their own systems. In a former edition I gave an analysis of nine different methods then quite recently recommended. Of these eight represented the practice at as many of the leading hospitals in London.[1] With the exception of that at St. Bartholomew's, where the treatment was said to be invariably successful, no opinion was offered on this point, and the only conclusion to arrive at was that seven opposite methods must be equally efficacious, and that had ten times the number of hospitals been reported upon the result would have been ten times as much conflict of testimony. Under these

[1] Condensed from reports in the Lancet, vol. i., pp. 331, 362, 458. 1867.

circumstances, it appears to me, that to extend such observations can only increase the bewilderment which the reader must necessarily feel on noticing such a uniformity of effect from such a diversity of causes. We may as well once for all admit that the question of treatment is gravitating into a state of hopeless confusion; and that the surgeon who has mastered all the literature of the subject, will, so far as reading goes, scarcely be better qualified to treat his patients successfully than the student who confines himself to the first book which his teachers recommend to him.

I have now endeavored to give the reader chapter and verse for the three postulates I ventured to bring forward, namely: 1. That except with respect to injections treatment has not changed so much within the last century or two as might have been expected. 2. That there prevails an irreconcilable discrepancy as to the best method of coping with this disorder. 3. That the ordinary method of stating the results of treatment does not enable the reader to form a positive opinion as to the relative value of the remedies actually employed. Consequently I see no way of getting at the truth but by the most rigorous search into the qualities, real or supposed, of each substance experimented upon, and this I have attempted to the best of my ability. There are, however, one or two points in connection with this subject, such as the expectant treatment, which had better be discussed before taking up the subject of the remedies for gonorrhœa.

Expectant Treatment.—This system has at one time or other had advocates of such capacity that it cannot be passed over. Some few years ago it found a champion in Dr. Chambers, of St. Mary's Hospital. This gentleman says[1] that gonorrhœa is naturally a most mild disease both in the male and female, *and if left to itself will get well in a short time, occasionally in four or five days*, while the simplest treatment will remove it *in a fortnight* if it be not made severe by the folly of the patient or his medical attendant. "I consider," he says, "all primary heroic treatment of urethral discharges *a most unjustifiable interference with nature.*"

It is not very easy to imagine how any one could argue in favor of a more hopeless cause. There is no evidence brought forward in support of a statement which runs quite counter to the experience of the greatest men who have studied the disease. What they, after mature deliberation, say, utterly negatives the idea of gonorrhœa being so easily managed by the simple process of letting it alone.

I shall state further on my reasons for thinking that this kind of disbelief in the powers of medicine is unfounded, and that the treatment I have ventured to recommend will on an average always cure gonorrhœa in less time than it requires to wear itself out. I regret that I cannot give a full account of what Dr. Chambers's treatment is, but the fact is that the

[1] Clinical Lectures on Gonorrhœa. Lancet, vol. i., p. 582. 1861.

part of his lecture devoted to gonorrhœa only occupies half a column of the *Lancet*.

I have collected a good many cases in which the expectant treatment had been pretty fairly tried, by the patient, however, rather than the surgeon, and where the gonorrhœa disappeared quickly of its own accord. But in all these I had to depend on the unsupported evidence of the patients, which I need scarcely say is, with all conceivable good faith on their part, almost useless in a scientific point of view. When a man, on whose truthfulness we feel able to rely, tells us that a discharge went away in a few days without his doing anything for it, we at once admit the fact; but it would be a step of a totally different nature to accord to such a fact any value in determining the average duration of gonorrhœa under the influence of expectant treatment. Yet this is the only evidence I have been able to procure, and so far as I can make out it is the only evidence employed by those who recommend this system. Though I have often heard of such events, I have never yet seen a gonorrhœa run its course and get quite well; indeed, I need scarcely say that the vast majority of patients would not give a surgeon the opportunity of trying such an experiment. They go to him expecting he will do his best to free them from a disagreeable complaint, and any patient who found his surgeon doing nothing would naturally imagine he could do that as well himself. Hospital in-door practice would alone afford a proper opportunity, and in that department I believe the experiment has not yet been tried.

But for one case where, according to the patient's version, so fortunate a termination as spontaneous extinction of a gonorrhœa thus treated took place, there were at least ten where the result was widely different, where the patients had, according to their own statement, taken all possible care not to aggravate the disorder, abstaining carefully from stimulants, etc., and where the cases had lasted months and even years, and might have in all probability lasted much longer were it not that even the most indifferent persons generally get wearied in the long run of seeing the hateful discharge forever hanging about them, and at last make up their minds to do what they should have done first, go to some surgeon who will set them right. Indeed, I suppose it is difficult to limit the length of time gonorrhœa might sometimes last if systematically neglected, and even where very carefully attended to. Ricords relates[1] a case where the patient had suffered from gonorrhœa for more than forty years, and I have seen several where the patient had had it for five, six, or seven, and in two instances for upward of twelve years. True, in all these cases there was not much running, but it was distinctly purulent; the severity of the first symptoms, too, had long passed off, but it was evident that a slight irritant would speedily rouse them to very unpleasant activity, a fact of which the pa-

[1] Lettres sur la Syphilis, p. 120.

tients were quite aware. Mr. Johnson very justly remarks, that "the surgeon who calculates in a sanguine manner on the natural cure of gonorrhœa will probably be more remarkable for patience than success." It is, according to him, repeating the old story of the rustic by the bank of the river, waiting till the stream ceases to flow!

Gonorrhœa as a Cause of Stricture.—Again, it is to be borne in mind, that should the experiment of leaving gonorrhœa to itself fail, and should the disease in consequence last a certain time, it will, in a given percentage of cases, certainly be followed by swelled testicle and stricture. In many old-standing gonorrhœas the surgeon, on passing the bougie, finds a certain degree of contraction, with tenderness of the urethra at different spots, and often, even when there is no discharge from the urethra at the moment of examination, small clots or strips of pus and mucus will be found adhering to the bougie when it is withdrawn. There is indeed reason to believe that in some persons a tendency to stricture takes place *almost as soon as the gonorrhœa has well established itself*, and that up to a certain degree, at any rate, *it constantly and uniformly tends to get worse.* Hunter's old rival, Jesse Foot, pertinently says, "that a gonorrhœa may cease to be a gonorrhœa if left to its own action may be true, but it may also be as true that it might not cease to be a gonorrhœa till it had reduced the organism within the urethra to a condition which could not afterward be restored to a sound state."

Hunter and many other surgeons have, it is true, considered the theory of stricture arising from gonorrhœa as a mere prejudice, and as I was anxious to investigate this subject carefully, and had no theory to serve, I made for a long time a careful collection of cases, going into the most minute details. I was at last obliged to confess that the mere history of the case, as given by the patient, always offers insufficient and doubtful data. However, after carefully weighing what facts I could collect, I think myself fairly warranted in drawing the following conclusions, which, after all, contain nothing new:

1. That strictures arise in persons who have never had a gonorrhœa, and in some at such an early age as to preclude all probability of gonorrhœal infection.

2. That occlusions of a similar character occur in mucous canals, without being preceded by any inflammatory and purulent discharge.

3. That the progress of the stricture seems to bear no sort of proportion to the duration or severity of the gonorrhœa.

4. That the proportion of patients attacked by stricture to those who suffer from gonorrhœa is extremely small.

5. That gonorrhœa appears to develop the tendency to stricture in persons who would otherwise never have been assailed by it.

But I need scarcely point out to the reader how untrustworthy such conclusions are. To get at the truth we require information which we are never likely to procure; for, first of all, it would be necessary, before at-

tempting any deduction, to divide the whole male population of a given district into—*a*, those who had had gonorrhœa, and *b*, those who had not; secondly, the males must be again separated into *c*, those suffering from, and *d*, those free from stricture. The proportion of *c* to *a* and *b* would give us something like data.

The following table is taken from the *Edinburgh Medical and Surgical Journal*.[1] It contains, as the reader will observe, cases of gonorrhœa treated in different ways in the hospital of the Castle of Edinburgh by Messrs. Johnston and Bartlett:

TABLE I.

Cases of Gonorrhœa treated in different ways.

CASES TREATED WITH REST AND ABSTINENCE.

No. of Cases.	Result of Treatment.
3	Discharged cured in 3 days.
2	" 5 "
4	" 7 "
4	" 10 "
1	" 18 "
1	" 23 "

Or an average of 8½ days.

Cases treated with Cubebs.	Cases treated with Capsicum.	Cases treated with Camphor.
2 were cured in 4 days.	4 were cured in 8 days.	1 was cured in 5 days.
2 " in 5 "	4 " in 12 "	1 " in 8 "
4 " in 6 "	2 " in 24 "	1 " in 14 "
Average 5¼ days.	Average 13½ days.	Average 9 days.

To these may be added the cases tabulated by Mr. Macfie Campbell, of the Dreadnought Hospital,[2] who found that the average duration of gonorrhœa, treated with copaiba or cubebs, was thirteen days.

It will be observed that of these cases fifteen treated with fasting and quiet were cured in three to twenty-three days; eight by cubebs, in four to six days; three by camphor, in five to fourteen days; ten by capsicum, in eight to twenty-four days; whereas twenty treated with injections of lapis infern. ʒ j. to ℥ j. were cured in three to forty-two days.[3] With the exception of the cases in which cubebs and injections were given, these figures may be held to represent pretty well the effects of expectant treatment, as it is difficult to believe that either capsicum or camphor would materially shorten the course of gonorrhœa; any rate, we do not as yet know that

[1] 1818, p. 264. [2] Lancet, vol. i., p. 73. 1871. [3] Op. citat., p. 263.

they do. I have cited this list, as it is the only thing in the shape of statistics bearing on this point that I have met with. The results of treatment, as given in it, by no means harmonize with my experience, the time for cure appearing to me much too short.

Homœopathy.—Of that singular compromise with expectant treatment called homœopathy I have no personal experience to record beyond what I have learned from patients, and their report is to the effect that the action of the remedies is so slight as to elude the closest observation. I fancy, too, that even the supporters of homœopathy would be puzzled to bring forward a series of cases showing that gonorrhœa was cured more quickly by infinitesimal doses than by active allopathic treatment. Till that is done, or at any rate attempted, it will be unnecessary to pursue the subject farther.

CHAPTER IV.

TREATMENT (CONTINUED).

Classification of Remedies.—The most practical arrangement of the various means of treatment for gonorrhœa appears to me a division into *A*, internal remedies; *B*, external applications, such as lotions and fomentations; and *C*, direct applications, comprising injections, caustic, bougies, and so on.

A. Internal Remedies. 1. *Copaiba.*—Perhaps without exception the most potent and generally used of all the internal remedies for gonorrhœa is copaiba, one of the most nauseous drugs ever found out. Excepting, perhaps, the plan devised by Mr. Thorn, no method of really disguising its taste without impairing its efficacy has been discovered, and other objections apart, this alone is an insuperable drawback. I have heard scores of persons say that they would rather leave a gonorrhœa to itself than again take copaiba. Besides, in a certain percentage of cases, copaiba, if given in sufficiently large doses to influence the discharge, brings on nausea, retching, and vomiting, griping and purging, great irritability of the stomach and often of the temper too. Symptoms of strangury not unfrequently follow its exhibition. Mr. Johnson has seen [1] acute inflammation of the bladder, extensive suppuration in the thigh, severe gastro-enteritis, and even death follow the use of it. M. Ricord has seen [2] serious effects on the nervous system, such as partial paraplegia and temporary hemiplegia, follow from the same cause, and Mr. Lee suggests [3] that organic disease of the kidneys, thickening of the coats of the capillary tubes, etc., may be caused by giving it for a lengthened period. In several instances, when taken during an epidemic of cholera, it appears to have determined an access of this complaint. Dr. Durkee mentions [4] an instance where a patient was attacked with a species of cholera, the symptoms being griping, vomiting, and purging, from taking merely half an ounce. Again, in certain constitutions it brings on pain in the region of the kidneys, hæmaturia, severe headache, giddiness. The vomiting, too, it must be remembered, which copaiba brings on is horrible, and few but the most resolute, who have once suffered in this way, can be induced to make a second trial.

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[1] Op. citat., p. 52, etc.

[2] Traité Pratique, p. 732.

[3] St. George's Hospital Reports, vol. vi., p. 52.

[4] Op. citat., p. 39.

One pretty certain result of all this kind of thing is, that some patients give up treatment in despair, others are driven to try some dangerous remedy, such as a very strong or irritating injection, *e.g.*, one of bichloride of mercury, a mistake I have known several times committed ; while a few try to overwhelm the disease by swallowing an inordinate quantity of wine or spirit, a freak of very probable occurrence, inasmuch as probably every patient has in his turn heard some wonderful story of gonorrhœa being cured in this way. When to all this is added the fact that copaiba is never really indispensable, inasmuch as every case that can be cured may be got rid of without resorting to it, I think there are very strong grounds for the views just laid down.

It will perhaps be said in reply, that such objections apply to all remedies ; that any potent drug taken in excess will produce serious symptoms ; that to discard all remedies for such reasons would be to reduce medicine to a nullity. I have heard such a method of getting over these objections repeatedly put forward, but it does not meet the case. *These disagreeable results occur when copaiba is given in doses which very good surgeons have not hesitated to recommend.*

Even were it an infallible remedy for the discharge, its disagreeable action in so many cases, and the smell it communicates to the breath and urine, would always be obstacles to its use. It is, however, anything but infallible.[1] It fails in a large proportion of cases it is given for ; it fails in every dose and in every form. Half-ounce doses are no more to be relied on than those of half a drachm ; it is often no more to be trusted to in the form of capsules than in that of injections,[2] enemata,[3] or suppositories. Now, as no amount of experience will enable the surgeon to diagnose *at the outset* those cases in which copaiba will be useful from those in which it will almost certainly fail, it necessarily follows that every surgeon who treats *all* cases with copaiba, and there are plenty who do so, *must give it in many instances where it is sure to be of no service.* It seems to me that there is no getting over this fact.

It appears that whatever disadvantages the use of copaiba may entail it still has numerous advocates. My own experience has satisfied me that the practice of giving it is very extensively diffused, and Mr. Wheeden Cooke confirms this. On inquiry at the London Custom House, he found that during the first ten months of the year 1859, no less than 118,396 pounds of copaiba were admitted, or at the rate of 151,075 pounds annually—a quantity sufficient to supply five hundred thousand people every year with a strong dose three times a day for nearly four weeks ![4]

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[1] Johnson : Op. citat., p. 88. Ricord, Traité Pratique, p. 726.

[2] Sigmund has found that injections of the urine of persons taking copaiba are inert. Schmitt's Jahrbuch ; also Braithwaite's Retrospect, vol. xxxviii., p. 451.

[3] British and Foreign Medical Review, July, 1856.

[4] Lancet, vol. i., p. 93. 1860.

The following table, drawn up from cases in my own practice, contains some statistics which may be of value to those really desirous of investigating the subject:

TABLE II.

Cases treated with Copaiba.

	Initials.	Nature of Case.	Treatment.	Result.
1	J. D.	Mild gonorrhœa of three months' duration.	Copaiba. Injections of sulphate of zinc and nitrate of silver.	Not quite cured at end of 27 days.
2	W. J.	Gonorrhœa of three or four days' standing.	Potassio-tartrate of antimony, copaiba, turpentine, and steel.	At the end of 86 days left off attending. Not quite cured.
3	—	Gonorrhœa of three days' standing.	Pulv. salin. At the end of fourteen days copaiba, and then turpentine. Afterward colchicum.	Cured in 65 days.
4	J. S.	Ordinary gonorrhœa.	Had been treated for seven months with sulphate of magnesia, copaiba, etc.	At the end of this time he was still suffering from gleet, cloudy urine, and pain over the bladder.
5	L. H.	Gonorrhœa of a month's standing.	Injections and purgatives for fourteen days. Pulv. salin. and inject. of sulph. of zinc. Copaiba, turpentine, and pulv. salin. Injections.	Cured in 52 days.
6	W.	Gonorrhœa of a week's duration.	Magnes. sulph., followed by copaiba and nitrate of potass. Injections of sulph. of zinc.	Not quite cured at the end of 3 months. Subsequently he reports that the disease died out without anything further being done for it.
7	J. W.	Gonorrhœa of some days' standing.	Aperients and copaiba perseveringly used for seven months.	Rapid improvement. Severe relapse, apparently from bathing. At the end of 7 months scarcely well.
8	Mr. N.	Gonorrhœa, second attack, very severe.	Copaiba, liquor potassæ, compound calomel pill at night.	Cure twice deferred by his giving up treatment just as he appeared to be getting quite well.
9	Mr. R.	Gonorrhœa of four days' standing, complicated with a sore on the penis.	Copaiba and liquor potassæ with five grains of blue pill every night for a short time. Injections of nitrate of silver and sulph. of zinc.	Discharge removed in 3 months.
10	Mr. W.	Gonorrhœa of a fortnight's standing; first case.	Copaiba, cubebs, zinc injections. Almost constant rest.	Little improvement at the end of 12 weeks.

	Initials.	Nature of Case.	Treatment.	Result.
11	Mr. E.	Gonorrhœa of four days' standing; second attack.	Brisk purgatives, copaiba, liquor potassæ, pil. hydrarg. chlor. comp. Injections of arg. nit. and zinc. sulph.	Cured in about 7 weeks.
12	Mr. B.	Gonorrhœa of some weeks' standing.	Copaiba, liquor potassæ, compound calomel pill.	At the end of 2 months still some gleet remaining.
13	A. T.	Ordinary gonorrhœa.	Took six drachms of copaiba, and the same amount of spirit of nitric ether, every week for one year.	Still some purulent discharge remaining at the end of that time.
14	Mr. H.	Ordinary gonorrhœa. Patient very delicate.	Took two pints of copaiba in two months, under the care of an experienced surgeon.	No better at the end of the time.
15	C. S.	Simple goncrrhœa.	Took half a pint of copaiba a month for four months.	Discharge diminished to a very small amount; returned directly on the copaiba being left off.
16	Mr. F.	Rather severe. Patient himself a surgeon.	Copaiba in small doses, and then an ounce daily for above two months.	Little if any improvement at the end of this time.

I could easily lengthen this list, but I cannot see that doing so would serve any useful purpose. If what has been said will not work conviction, I am afraid but a small amount of faith would be gained by constructing a more elaborate table. It is of little use to accumulate evidence when the reader is indifferent or has resolved beforehand that he will not be convinced. I heard a surgeon say before the Medical Society of London, that he did not believe gonorrhœa *could* be cured without copaiba. The reader's experience will possibly supply him with equally striking instances. Of what use then can be the most positive proof in such cases?

It may be supposed that the copaiba here was given injudiciously, and that the surgeon had not waited till the inflammation was subdued, or that the patient was refractory or intemperate. Nothing, however, could be more incorrect; case eighth excepted, most of them were model patients—men really anxious to get well. In the cases treated by myself, every precaution I had ever found of service was used, for at that time I believed in copaiba.

Here the reader may object that I am making out a case against copaiba; so far from this, however, I am quite ready to admit that it is of service in a great number of cases, though I myself never had such success with it as some writers have recorded. Graves, for instance, tells us that Dr. Roe cured his patients in a fraction less than twelve days. I never could do so; and besides, I think, no one will deny that it *does not* cure a great

number of cases, which is of far more importance, and any person who, after a long and fair trial, finds such results, is plainly justified in seeking for a more generally useful remedy.

Dose and Mode of giving Copaiba.—It would be satisfactory if those who recommend copaiba would really come to an agreement as to the most suitable dose, the best mode of giving it, and the period at which it should be used. At present any person seeking for reliable information on these points must be rather apt to get bewildered. Some surgeons give four-and-twenty times as strong a dose as others. Again, it was stated by a reviewer in one of our leading medical journals, that no sensible or experienced surgeon would think of giving copaiba in the acute stage of gonorrhœa; and many authors, M. Ricord for instance, strongly advocate the necessity for preliminary steps in the shape of antiphlogistics, etc. But it is quite certain that numbers of patients take copaiba at this stage, not only with impunity but with benefit. Irrespective of the evidence on this head met with daily in practice, some surgeons distinctly recommend it at this period. "It would appear," says Dr. Bumstead,[1] "that copaiba can be administered with safety and to much greater advantage in the acute stage of gonorrhœa, or at an early period of the stage of decline, than afterward; and the same is true of cubebs." My own experience quite confirms this. Dr. Durkee says[2] that patients have taken eight drachms at a dose, morning and evening, in the most acute stage, with entire success and without any preparatory treatment, and Dr. Veale goes so far as to maintain,[3] that the great error in giving copaiba is allowing the acute stage to pass before administering it, and ordering too small doses. As to waiting till the inflammation is subdued before administering it, it is to the best of my judgment simply useless. Moreover, copaiba, when it does cure the disease, cures it more quickly and certainly when given at once than after antiphlogistics. As to any danger from using it in this way, it is imaginary. The few recorded instances of serious or fatal results from prescribing it in the acute stage, when analyzed, seem to have been due to the irritable constitution of the patient, imprudence and intemperance on his part, or to the medicine being continued when it was manifestly acting as a poison, and would probably have occurred, to a considerable extent at any rate, had copaiba been administered under similarly unfavorable auspices at another stage. I have repeatedly known it make strong and temperate patients very ill, when taken for a mere gleet.

The most efficacious way of giving copaiba is, to my thinking, in combination with liquor potassæ. Spirit of nitric ether or nitrate of potass may be advantageously added, as may the compound spirit of lavender, which, mawkish as the last is to some persons, still serves to disguise the more disagreeable flavor of copaiba. Mucilage is useful for the same

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[1] Op. citat., p. 91. [2] Op. citat., p. 38.
[3] Lancet, vol. ii., p. 2. 1855.

purpose, as well as for suspending the balsam. Mint-water is the best vehicle that I know; some persons, however, strongly object to the taste of it, in which case cinnamon-water or camphor mixture may be substituted.[1] With regard to the addition of such substances as cubebs, alum, tincture of cantharides, of sesquichloride of iron, and so on, I have had little experience, but that little is decidedly unfavorable. However I give[2] two or three formulæ taken from Dr. Bumstead's work.

Dr. Durkee recommends that copaiba should be taken in coffee, wine, or compound tincture of cinchona. Other authors have suggested sucking a slice of lemon immediately afterward.

It seems to me a great pity, if surgeons will continue to prescribe and patients to take copaiba, that Mr. Thorn's plan is not tried. This gentleman found that in two ounces of copaiba there are five parts in which all the virtues of the balsam reside, and eleven parts containing only useless and nauseous residue, so that tons of dirt are annually swallowed by patients to no purpose. As I have already said, Mr. Tyrrell obtained the most extraordinary success with Mr. Thorn's extract, and certainly the trial could not have been made by better hands; but I imagine the subject has now lapsed into oblivion, although, supposing his statements and those of Mr. Thorn are well founded, no subsequent method of prescribing the drug can be said to possess so fair a claim to public notice.

But sometimes the question is not what is the most efficacious formula, but what preparation the patient's stomach can bear best. Many persons cannot support copaiba in a liquid form, and the surgeon looks round to see in what solid vehicle it can be got to stay on the stomach. There is no want of variety here; invention has been racked to produce something which will be pleasant or, at any rate, tolerable. Capsules of all kinds, sizes, and degrees of solubility; pills, lozenges, dragées, perles, pastes, etc., have been brought forward in plenty—some of them ingenious enough. I believe common experience has united to condemn them one and all as more or less unreliable. Perhaps one of the best substitutes for copaiba in the form of mixture is that of the balsam solidified by magnesia; while I think one of the least unpleasant forms is that adopted by the dispenser at University College Hospital, who prepares the copaiba with honey, sugar, etc., so that it resembles "raspberry jelly," though one gentleman who had tasted it spoke of it with horror. The formula is given at full length in the number of the *Lancet* from which this notice

[1] ℞. Copaibæ ʒ ij (ad ʒ iij), Mucilaginis acaciæ ʒ iv, Liquoris potassæ ʒ iss, Potassæ nitratis ʒ iss, Aq. menth. pip. ad ℥ vj. ℳ. Capiat ℥ j. bis die.

[2] ℞. Olei Copaibæ, Olei cubebæ, aa. ʒ j, Aluminis ʒ ij, Sacchari albi ʒ iv, Mucilaginis ʒ iv, Aquæ ℥ ij. ℳ. A teaspoonful to be taken three times a day. ℞. Copaibæ ʒ x. Tinct. cantharidis, Tinct. ferri chloridi, aa. ʒ ij. ℳ. Dose from half a teaspoonful to a teaspoonful. The following formula is copied from Dr. Druitt's Vade-Mecum, 1870, p. 808:—℞. Copaibæ ʒ iij, Olei cubebæ m. xx, Spir. ætheris nit., Spir. lavandulæ, aa. ʒ ij, Olei cinnam. gutt. ij, Aquæ fl. ℥ v. Dosis ℥ j. ter die.

is taken.[1] It is to be remembered, however, that in all these preparations one very important ingredient, which figures in the prescription I have recommended, the liquor potassæ, is omitted. It is said that the alkali turns the copaiba into a kind of soap, insoluble in water, but in my experiments this has not appeared to impair the efficacy of the drug.

One thing is absolutely necessary, and that is to secure pure copaiba. Most medical men have, I presume, noticed a very great difference in different samples of this drug, but generally speaking they have little idea of the extent to which it is adulterated, and possibly some part of the discrepancy in the results from using copaiba might be explained by the varying degree of purity in which it is met with. Rape-oil seems to be a favorite ingredient for adulteration; some specimens contain a large amount of this useless substitute. Dr. Durkee says that this adulteration is easily detected by dropping a little of the fluid into water. The pure copaiba assumes a spherical form, while the other does not. Irrespective of this, two kinds of copaiba are met with in commerce. Although neither of these is known to be adulterated, yet one is naturally much weaker than the other; the stronger one solidifies with magnesia, but this is not the case with the other. Again, it seems that unobjectionable specimens differ materially as to the amount of volatile oil they contain, the percentage being only thirty in some, and as high as eighty in others,[2] and as about forty per cent. seems to be the most useful standard, it has been recommended that only tested balsam should be used. Of the value of this oil, when given separately, I have had no practical experience. It seems generally agreed that we can depend less upon it than upon the balsam, and the resin only of copaiba has been given, it is said, with great success.

The cutaneous eruption which sometimes follows the use of copaiba, would not, in my opinion, be a sufficient ground for withholding it. For the most part it is a mild form of urticaria, distinguished by diffused redness of the neck, shoulders, face, and upper part of the body, accompanied generally by itching, tingling, a feeling of not being well, and disorder of the stomach. It usually passes off under the influence of a saline or febrifuge, aided by rest and light diet. Some serious cases have happened. Occasionally this affection has given rise to troublesome mistakes. Simon speaks[3] of a case where the house surgeon pronounced a patient with balsam rash to be ill of scarlet fever, and kept him six weeks in doors; and some years ago a gentleman gave, at a meeting of the Medical Society of London, the particulars of a case where the same error seemed to have occurred, the speaker himself having believed the eruption to be that of scarlatina.

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[1] Vol. i., p. 570. 1871.

[2] American Journal of Syphilography, vol. iii., p. 293.

[3] Ricord's Lehre von der Syphilis.

2. *Cubebs.*—What I have been able to learn respecting the action of this remedy would lead me to place it pretty much on a level with copaiba, but the statements about it are so vague and conflicting, that it is impossible to form any certain conclusions. One observer, Mr. Broughton, reports [1] that he cured nine cases out of ten with it. Another, Mr. Crauford, asserts [2] that it fails in many cases. A third, Dr. Pereira, found it exert [3] no influence over the disease in the majority of instances, a statement which is much more in unison with my experience than that of Mr. Broughton. Again, it is pretty widely known that the use of cubebs in this complaint owes its origin in part to the story related by Sir Astley Cooper, of one of his patients having cured himself of a gonorrhœa with this drug in four days, or more strictly speaking, in some space of time between a Thursday and the Monday following; now I believe this experience has been so rarely verified that it must be looked upon as most unusual. Possibly some part of all this discrepancy may be explained by a fact, which Mr. Norman stated in a very practical paper read before the North London Medical Society; some other part, perhaps, by a statement of Dr. Frazer's, that he has seen a large quantity of nutmegs, which had been subjected to distillation, sent to be used as cubebs! Mr. Norman brought forward some very strong facts to show that the action of the pepper, when freshly ground, is much more certain and potent than when it has been kept some time. He, however, admitted that even thus used it often fails. To this difficulty must be added an objection made against copaiba, viz., *that it is utterly impossible to separate, at the outset of the treatment, those cases in which it is likely to be of service from those in which it is almost certain to fail;* and hence, that a surgeon treating twenty cases with this drug, cannot tell beforehand how many out of this number he is even likely to cure, leaving aside any question of certainty.

Cubebs is said in some cases to have exasperated the symptoms of gonorrhœa; but this I think is doubtful, and most probably arose from its having exercised no control over the disease it was given for. I am much inclined to doubt if any medicine can aggravate the disease, except in failing to cure it. Behrend, in his "Syphilidologie," says cubebs does not suit an irritable stomach—an announcement I can easily credit. There is, however, good reason for believing that in some cases large doses have set up considerable irritation, if not actual inflammation, in the prostate and bladder.

It occasionally cures with marvellous rapidity, but these cases occur in those happily constituted persons who throw off disorders with extreme ease, and who are freed from any severe gonorrhœa by very simple remedies.

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[1] Transactions of the Medico-Chirurgical Society, vol. xii., p. 99.

[2] Edinburgh Medical and Surgical Journal, p. 52. 1858.

[3] Elements of Materia Medica, vol. ii., p. 756. 1840.

When the surgeon has decided to prescribe cubebs, it should, I think, always be ordered in teaspoonful doses of the fresh-ground pepper two or three times a day. Mr. Squire suggests moistened wafer-paper as a vehicle. The paper may be flavored with essential oil of almonds. The powder is made into a paste with syrup of ginger, and then laid upon the paper, which is folded over it. The patient takes a mouthful of water, and then tosses the bolus down his throat. It is said in the *Pharmaceutical Journal*,[1] that "it is surprising how easily patients acquire the tact of bolting these boluses, without any convulsive action of the muscles of the throat." The surprising part of the matter to me is that they ever acquire the power of doing so, and indeed that they do not choke themselves at the first attempt. I should have thought that it almost equalled the feat of swallowing a clasp-knife.

The practice of prescribing copaiba and cubebs together, when one or both have failed separately to cure the gonorrhœa, is, I believe, a useless experiment. After giving my best attention to the facts, I can only conclude that all the instances in which this combination is said to have effected a cure, were simply cases in which the separate ingredients had been of defective quality, or taken irregularly, or in too small doses, or where their action had not been properly seconded; and that it is very doubtful whether this combination possesses any curative power superior to that of either drug given separately.

3. *Kava-Kava.*—The root instead of the berry of another pepper, the piper methysticum or kava-kava, is enthusiastically recommended[2] for this complaint by M. Dupouy, who does not seem to be aware that it has long been known, and that the disgusting mode of procuring an intoxicating drink from it, practised by the old women at Otaheite, where the "enchantresses of gay Licoo," when age has robbed the charming young creatures of their teeth, are specially told off for this purpose, has been already quite sufficiently described. The tree is a native of Oceania, and is found in the Society Islands, Samoa, Wallis Island, etc. The fresh root when chewed is bitter, astringent, and sialagogue. It is the dry root which is used for gonorrhœa, and the method of employing it at Tahiti is as follows: Four or five grammes of the root are macerated in a thousand grammes of water for five minutes, and this monstruous potion is taken daily in two doses, indifferently before or after food, till a cure is effected. In twenty minutes after the first dose a pressing desire to make water is felt, which most likely the reader will consider a very probable result indeed. However, this is soon compensated for, as any pain previously felt during micturition disappears and is replaced by a sense of comfort, while urine charged with deposit and coloring matter becomes clear. Ten or twelve days of this treatment always effected a

[1] Vol. v., p. 503.

[2] Journal de Thérapeutique. Quoted in the Gazette Médicale de Paris, p. 166. 1876.

cure in the cases which he saw. M. Dupouy therefore considers the kava-kava a powerful diuretic and a remedy "par excellence" for gonorrhœa. It does not derange the digestive organs, induces neither diarrhœa nor constipation, is taken with pleasure by those who have a delicate stomach, stimulates appetite and does not create any distaste.

Such is the flattering side of the question, and but too frequently the only side presented to us; it may therefore perhaps be as well to take another, which is to the effect that the kava-kava does not possess a particle of the curative virtue ascribed to it, and that the story seems fated to figure some day in the long list of self-deceptions. Herr Zeissl administered the drug carefully to twenty patients, *in not one of whom did it produce the slightest change for the better!* [1]

4. *Turpentine.*—In a scientifically arranged treatise, turpentine ought perhaps to have followed copaiba, and not cubebs, but as I aim only at being useful, I trust to stand excused for placing together the two remedies most frequently used and most frequently combined.

Turpentine was, however, in its time quite as fashionable a remedy for gonorrhœa as cubebs at the present day. It seems clearly to possess a certain amount of control over the discharge in the later stage, when it has become partly mucous but is still profuse. Some substances of this nature, such as the resin of the spruce fir, act very beneficially when the inflammation of gonorrhœa has extended to the neck of the bladder, and even to the body of this viscus. In all other stages of gonorrhœa, and particularly when it is acute, every preparation of turpentine that I have seen tried has always appeared to me inert.

In large doses it may occasion sickness or nausea, but I believe it is quite unnecessary to use it in such a way, and that all the benefit likely to accrue from its use will be obtained by giving it in moderate quantity. Perhaps Chian turpentine will be found as useful as any. It should be simply allowed to dry to the consistence of an ordinary extract; it is then rolled in magnesia and divided into five-grain pills, two, three, or four of which may be taken twice a day. Care, however, should be taken to secure genuine Chian (or Cyprus) turpentine, the resin of the turpentine pistachia (Pistachia Terebinthus), as the coniferous turpentines are only too often substituted for it.

Remedies of this kind have been tried by means of inhalation, and I suppose the result has been about as complete a failure as could well be imagined. Two cases of gonorrhœa treated in this way are mentioned in the *Wiener medizinische Zeitung*,[2] one with rectified turpentine, a cure ensuing in twenty-five days, and one with ethereal oil of pine, which answered so badly that at the end of eighteen days the patient was obliged to fall back upon astringent injections. The remedy is therefore useless,

[1] Wiener medizinische Wochenschrift, S. 1023. 1879.

[2] 1873, S. 253.

and any farther attempts in this direction would amount to inflicting needless suffering.

5. *Ngan Plang.*[1]—Some years ago my attention was called to the value of this medicine in gonorrhœa, and half a pint was sent to me for the purpose of making some trials with. It is a reddish-colored fluid, about the consistence of syrup, and of a warm balsamic taste, reminding one of a delicately flavored kind of copaiba or turpentine. It is, I believe, for I have not been able to obtain such full and precise information about it as I could have wished, found only in Java, where it is considered a specific for gonorrhœa. It is taken in doses of a teaspoonful two or three times a day, no other means being used. No restriction as to diet, etc., is imposed on those taking it. I gave it in four cases, in drachm doses two or three times a day. All the patients assured me that they took the medicine with the greatest regularity, and I have every reason to believe that they would only state the exact truth. The report in every case was that they did not notice any particular effect from the remedy. It was not unpleasant, they said, to take, and agreed very well with them; beyond that they had nothing to relate. I examined the patients nearly every day while they were using it, but did not notice any appreciable action on the gonorrhœa.

I have since then repeatedly inquired of friends and patients who had been in the East, as to whether they had ever heard of this drug, but never met with any person to whom it was known. I have also examined the medical journals pretty diligently with the same view, but with equal want of success.

6. *Matico.*—As this drug contains a terebinthinate oil, it may very properly find a place here. I have been given to understand that it is used now in many cases of gonorrhœa, but that it is the resin which is employed, and in the form of capsules. My inquiries on this point, however, elicited no reliable information as to whether this is the fact, or how much of this ingredient is contained in each capsule. No mention is made of a resin in the Pharmacopœia, or Mr. Squire's "Companion." M. Diday tells us that druggists sometimes very judiciously associate it with copaiba, to which addition he ascribes the only power it possesses.

I have only had one opportunity of trying these capsules, and therefore can say but little about them. In the case I allude to, the patient, a delicate-looking, thinly built man, suffering under a moderately profuse discharge, attended with some chordee and irritability of the bladder, informed me that he had had gonorrhœa once previously, and that then the disease, after long resisting other remedies, was promptly subdued by taking twelve matico capsules daily. Consequently I thought this a very suitable case for testing the remedy, and advised him to take the same number of capsules. He accordingly procured some, which he identified

[1] Pronounced *Ne-an-Plang.*

as similar to those used on the previous occasion, and took them at the same rate. At the end of a few days, the discharge being in precisely the same state and his health being quite unaffected by the medicine, I suggested raising the dose, and he at once began taking eighteen capsules a day. Four or five days later he reported satisfactory progress, and then, two or three days after that, told me that he was no better than before he took the matico, having thus, in a very short time, twice changed his mind about the action of the medicine. For my part, although I saw the case almost daily, I could not observe that the remedy exerted any influence over the running.

I believe the patient did everything in his power to second the operation of the matico; indeed he was most anxious to get well, the continuance of his malady being for him a very serious matter; at the same time I am doubtful whether the remedy received a fair trial, as I am not quite clear that some degree of contraction was not springing up at the time; indeed a certain amount of it was found later on, and the case will be subsequently related under the head of cases complicated by stricture.

7. *Oil of Santal-wood.*—We are indebted to Dr. Henderson, of Glasgow, for a knowledge of this drug.[1] He gives it in doses of twenty to forty minims, and often notices a most marked suppression of the discharge within forty-eight hours. He recommends it as a pleasant medicine, not liable to cause sickness or to communicate any odor to the urine. Shortly after Dr. Henderson's communications some other reports appeared about the oil, almost if not quite as favorable as his own. A very natural result of this was that it came into general use, and though the demand for it has greatly lessened, yet I am assured there are many persons whose faith in it remains unshaken; and I need scarcely say that it figures in the preparation made by Messrs. Hewlett, the liquor santali flavi, of which great success is reported. Many of those gentlemen who have prescribed it largely consider it quite as efficacious as copaiba, and infinitely more pleasant both as to taste and operation. We have the authority of Dr. Otis in its favor. Dr. Atkinson, formerly house surgeon of St. Bartholomew's Hospital, Chatham, who was one of the first to employ it in England, and who watched its action with great care, was kind enough, in reply to some questions, to inform me that he had seldom found it fail in acute and subacute cases; that pain in micturition generally stops after the third or fourth dose, whilst the discharge itself usually ceases after the third day. Dr. Atkinson, however, thinks it as well to continue the oil up to the seventh or eighth day, so as to guard against the possibility of a return. With the exception of very slight griping pains about the bladder, he has never known any unpleasant results from the use of this remedy. The dose he generally

[1] Glasgow Medical Journal, p. 70, 1865; and Medical Times and Gazette, vol. i., p. 571. 1865.

gives is from twenty to thirty minims in a little mucilage and cinnamon-water three times daily.

A Glasgow correspondent of the *Practitioner*,[1] however, has questioned its possessing any curative power, the remedy having failed not only in his hands, but in those of other practitioners, while its other good qualities have been equally contested. M. Diday, in his new work, ranks the essence of yellow sandal, which I suppose is the same substance, among the futilities, *parmi les insignifiants ;* M. Panas also observed[2] that an odor was communicated to the urine, and that though the oil rapidly lessened the running, yet in a certain number of cases recourse to further measures was necessary ; and Dr. Purdon found that, so far from occasioning little nausea and having little smell, as stated by Dr. Henderson, he had in many instances to discontinue its use on account of the nausea it brought on, and that the odor was extremely well marked, remaining in the breath and on the hands for hours after being washed, and being evident in the urine.

These objections, however, did not deter Mr. Robert Park from espousing the cause of the oil, which he has done in a very able and temperate article,[3] showing a sound knowledge of his subject. The oil, he tells us, was first introduced extensively into practice by the late Dr. Milner, of Glasgow. It is in the case of full plethoric subjects, with thick purulent discharge from the urethra, that its specific power is so strongly marked ; in such cases it often effects a cure in from two to five days. He gives five minims every four hours, and says that larger doses are superfluous and even dangerous. If this view be well founded, we must conclude that other authorities are in error about the doses and properties of the oil, that it is perhaps only suited to particular cases, and that our knowledge of the subject must become complete before we can use it in a reliable way. He now says[4] it does not cure the urethritis, but restrains the running at once, very frequently stopping it in forty-eight hours, whereas I have never once been able to effect any such rapid change. Even then it must, he tells us, be continued "quite a fortnight after entire cessation of the discharge, to make sure the latter does not return."

It is very probable that some part of this discrepancy might be explained by a fact with which these gentlemen do not seem to have been acquainted. The fact is, that oil of santal-wood is so extensively adulterated with balsam of copaiba and castor-oil, that the genuine fluid forms in many cases but a very small part of what is administered. Some years ago I was assured by a gentleman on whose opinion I can quite rely, and who was kind enough to take a great deal of pains in order to procure me the information I required, that there was not a pint of pure santal-wood oil to be bought in the market at any price, and yet the supply to the retail houses was so regular and large as to seem practically inexhaustible ; a fact which

[1] Vol. iii., p. 196.
[2] Gazette Hebdomadaire, p. 843. 1865.
[3] Practitioner, vol. ii., p. 266. 1869.
[4] Ibid., vol. ii., p. 440. 1881.

he partly explained by adding, that once, when supplying the oil direct from the still, he had been asked how much copaiba and castor-oil it would require to bring it up to the commercial standard.

The pure oil of santal-wood is of a light but clear yellow, without the least tinge of brown, almost exactly the same hue as pure, fresh, sweet almond-oil; whereas that generally sold has a tint approaching the color of copaiba, and a look like mastic varnish which has lost some of its transparency; but to some extent the color of the oil differs according to the district from whence the wood comes and the age of the tree. The best oil has a slight smell of copaiba, a fact, I am told, from which the first hint of adulteration was taken. The pure oil is intensely strong, and so acrid in taste that I can only compare it to croton-oil. Though I have prescribed the oil as usually sold, I have not made many experiments with it, confining myself, as far as I well could, to that procured from Messrs. Pears, on which I felt assured complete reliance might be placed, and which they sell, I believe, pure as it drops from the still, in sealed bottles.

Most of the patients for whom I prescribed genuine oil have assured me that the doses ordered, from twelve to twenty minims, were as much as they could bear. One gentleman took thirty-five minims three times a day, but he was peculiarly insensible to the action of all the medicines I gave him, and even he had to discontinue the remedy at the end of two or three days, as he found it was inducing nausea. Judging from the effect which the oil produced on my own mouth, I should have thought it impossible for any one to support even such a quantity as thirty-five minims.

As to Dr. Henderson's statement, that it has a very slight smell, I cannot understand it. I kept a specimen of the pure oil for several months, and yet the smell, when the fluid was even slightly warmed, was exceedingly pungent and most characteristic; in fact it seemed to overpower that of any material the oil may be adulterated with. With regard to the cures said to have been effected by means of this oil given in combination with liquor potassæ, I may say that the latter fluid, given in moderate doses in conjunction with very small quantities of balsam of copaiba, or mucilage of acacia, linseed-tea, veal-broth, or any bitter infusion, will cure a great many cases of gonorrhœa—a fact which I briefly pointed out many years ago in the first edition of this work.

Some of my first trials with the oil were encouraging. Given as below [1] it seemed to agree very well with the patients, who found it rather stomachic than otherwise, and it certainly appeared to remove slight discharges, particularly when injections were also used. But even in some of them it did not succeed as I could have wished, and in the more severe forms of the affection I could not observe that it exerted any appreciable action.

[1] ℞. Olei santali, ʒ j., Ovi vitelli, q.s.; tere bene et adde, Spir. ætheris nitrosi, ʒ ij., Syrupi flor. aurant. ʒ iv., Aquæ cinnam. ad ℥ vj. M. Cochlearia ampla duo ter quotidie sumenda.

Certainly at the end of six, eight, and even ten days, the discharge had not ceased. My faith in its virtues has not improved on acquaintance; on the contrary, farther experiment has only shown that the skepticism set up by the first trials was justifiable. In all, taking those cases which I could watch, I have prescribed the two kinds, the pure and the oil of commerce, for twenty-two patients suffering from the acute form without effecting a single cure. It may be that I omitted some precaution which I ought to have taken, or gave the oil in too small doses, but if I am to rely upon my own experience, and pass an opinion, it must be that the oil is not possessed of as much curative power as balsam of copaiba. At the same time I think it a valuable addition to the Pharmacopœia as a remedy for bronchitis, in which complaint I have repeatedly used it, being more agreeable than copaiba and quite as efficacious, if not more so.

8. *Gurgun or Gurghun. The Gurgina Balsam or Wood-oil.*—This remedy, the product of the Dipterocarpus turbinatum, was also recommended by Dr. Henderson.[1] It is a medicine of the same class as the oil of santal-wood. Dr. Henderson experimented with it for a long time, and then, having exhausted his stock, was obliged to suspend operations. He, however, only used it in cases where copaiba had been tried and had failed. He gave it in large doses, such as a teaspoonful two or three times a day, and found it in every case successful within a week. I have no practical experience of its action, and I have not been able to learn whether any trials, of such a nature as to furnish the means of arriving at any reliable opinion, have been made of its power over gonorrhœa, except by the gentleman just alluded to.

9. *Erigeron Oil.*—Some years ago, Dr. J. S. Prettyman, in a communication to the *American Journal of the Medical Sciences*,[2] stated that he had tried the oil of erigeron in about fifty cases of gonorrhœa, and found that it arrests the discharge in about seventy-two hours, and effects a cure in from six to eight days. He did not, however, recommend it as a specific, though it seems from such testimony quite as much entitled to the name as copaiba.

The patients took the medicine as follows. A gill of an aperient infusion of senna and jalap, with some aromatic, was ordered, and so soon as it operated, ten drops of the oil on sugar were taken. This was followed up three hours later by a full dose of spirit of nitric ether in infusion of marshmallow. Then, three hours after this, or six hours from the taking of the first dose of oil, a second dose of oil was given, followed in its turn by a second dose of the nitric ether mixture, and so on. Dr. Prettyman states that he had only so far used the oil reputed to be obtained from the Erigeron canadense, but that he thought that of E. philadelphicum must be equal if not superior. The paper is very short, and contains no account

[1] Glasgow Medical Journal, p. 71. 1865.

[2] Vol. lii.

of the history, taste, properties, etc., of the oil. I suppose most persons who have read the account would imagine that this substance really possesses some control over gonorrhœa, yet it so entirely failed in the hands of Professor Stein, of New York, who seems to have given it a fair trial,[1] that it is difficult to refrain from supposing its virtues to be imaginary; while some very briefly recorded cases by Dr. Stark[2] show that it is at best a highly unreliable remedy.

This concludes the list of specific agents, so far as my knowledge goes, and I therefore pass on to the consideration of some which are more comprehensive in their meaning. Of these the first on the list is—

10. *Antiphlogistic Means.*—Of these it will not be necessary to give any lengthened account, the system having, as regards its old complete thorough-going shape, pretty well died out in England, and I believe entirely in Germany and America. In France, however, a few vigorous offshoots from it still survive. In at least two reviews of former editions of this work, the opinion was expressed that all mention whatever of it was superfluous, that the arguments employed against antiphlogistic treatment were out of date, a quarter of a century behind the time. But we know what a powerful influence French teaching has upon English practice. I heard an eminent specialist maintain, before a medical society, that nearly everything we have learned about venereal and urinary diseases was taken from the French; and when we find a master like Fournier recommending, in the acute stage of gonorrhœa when the symptoms are urgent, fifteen to twenty-five leeches to the perineum, repetition of this, with the very significant addition that bleeding from the arm is only exceptionally called for, it seems to me that it can be in no way superfluous to point out the inconsistencies and inutility of the method.

For I think there cannot be a doubt that, though indisputably proved by sound reasoning to be of the first necessity for saving life and subduing inflammation, though as universally accepted as any canon of therapeutics can well be, it was utterly superfluous in the great majority of cases, and the indiscriminate employment of it was a mistake. Possibly in some few cases it was, especially as regards the depleting process, what its supporters maintained it to be, a powerful means of relief. I have been told by men in large practice, men not at all prejudiced in favor of old fashions, that the abandonment of the lancet in many affections, pneumonia for instance, was an error. Granting this to be the case, I believe the extension of the system indiscriminately to inflammations of all tissues was equally an error, and that the benefits supposed to arise from its employment in by far the most of them were purely imaginary. Equally I believe that, though the system in the shape of leeching may have now and then been useful in some complications of gonorrhœa, such as inflammation of the

[1] New York Journal of Medicine, vol. i., p. 397. 1870.
[2] Canada Medical and Surgical Journal, p. 158. 1877.

prostate, the application of such means to the parent disease is uncalled for; a mistake, and one which a moderate amount of attention would avert.

In my early days I saw both bleeding and leeching employed for gonorrhœa, but in no single instance did I ever notice the least benefit from either; yet the practice was continued to the end of their lives by men who constantly saw such facts pass before their eyes. Nor do I find that the results, as given by those French medical men themselves, who adhere to a system in which antiphlogistic means play a very prominent part, are at all encouraging. Few authors have treated gonorrhœa more energetically than M. Ricord; I have no means of knowing what his present practice is, but at one time he used leeches, etc., in a manner bordering closely upon the heroic; and yet, though it is difficult to ascertain what time he requires for the cure of his patients, there is evidence enough to show that they often remain for weeks under his antiphlogistic treatment, even when seconded by rest, specifics, injections, and cauterization.

Fournier and Melchior Robert have evidently to a great extent moulded their treatment on that of Ricord. The former honestly admits that, face to face with a considerable number of refractory cases, his treatment answers very indifferently. To my mind, M. Robert's account and some of his incidental allusions look very like a history of failure. He calls gonorrhœa [1] an "interminable maladie;" speaks [2] of its interminable, its maddening,[3] persistence; of the half-cured state in which the urethra remains when "preceding blenorrhagias have left it in a leaven ever ready to ferment," [4] and honestly admits that, except in a few rare instances, when the abortive treatment avails, the disorder is only cured, in the most fortunate cases, by the aid of specifics and injections, at the end of thirty or forty days.

In the cases I collected from my own practice and that of my friends, the cures effected by this mode did not amount to more than one in four, and they were both slow and uncertain. Those which yielded were mild forms of the disease, and yet they lasted from thirteen to thirty-seven days; when injections also were used, antiphlogistic measures proved nearly equal to copaiba, for then out of twenty-three cases thirteen were cured, the average period of treatment being twenty-eight days.

11. *Purgatives* are another favorite remedy in this disorder. I have not been able to find much evidence of their curative power. Two or three authors speak of them as revulsives, others of their setting up an internal depletion, phrases which sound to me rather like the substitution of a theory for the statements of experience. What I could make out by experiment was, that a powerful purgative will, in some very mild cases, or at the beginning of the attack, most materially aid in cutting short the disease, and this is about all it will do. Dr. Bumstead says,[5] "We often meet with patients who have treated themselves with low diet and purging *for*

[1] Op. citat., p. 70. [2] Ibid., p. 80. [3] Ibid., p. 81. [4] Ibid., p. 117.
[5] New York Journal of Medicine, vol. ii., p. 210. 1859.

weeks, and are no better of their gonorrhœa." Durkee is strongly opposed to over-purging. "Patients," he says,[1] "of their own accord often pursue a cathartic plan for several weeks, and then report that their urethral difficulty is as troublesome as at the beginning." Mr. Whately relates[2] an instance in which a purgative was repeated every day for thirty days together, accompanied by a strict adherence to an antiphlogistic plan of treatment; and all this was done "without producing any material alteration in the complaint, or any considerable abatement in the inflammatory symptoms!" Rowley one[3] where the patient was purged and drenched till he looked like "a dead corpse." The result of this vigorous treatment was, that purple spots appeared on every part of the body; the greater part of the penis "dropped off," and very soon afterward the patient died.

I now proceed to give a table of cases in which these remedies were tested with all the care I could exert.

TABLE III.

Cases treated with Purgatives.

	Name.	Days previously ill.	Character of the disease, and previous treatment when ascertained.	Treatment.		Date of final disappearance of the discharge.
				Medicines.	Injections.	
1	W. D.	10	First clap.	Strong purgatives. Pot. iod. c. inf. rhei. gum. acac. c. pot. nit.	Sulph.zinc. arg. nit.	On the 35th day a stricture was detected. Cure in 2 months by bougies.
2	J. B.	3	....	Strong purgatives.	Nit. of silver.	Cure in 16 days.
3	W. H.	Not ascertained.	....	Ditto.	Sulph. of zinc, and occasionally nit. of silver.	Cure in 28 days.
4	J. S.	60	....	Pulv. salin. Steel and purgatives.	For one month none, then a strong injection once a week, and used one himself occasionally.	Cure in 47 days.
5	S. C.	Not ascertained.	....	Hyd. chlor. and haust. cath.	None.	At the end of 15 days no improvement.
6	H. H.	Not ascertained.	....	Ditto, followed by pot. iod. c. infus. rhei.	Injection only in the latter part of the treatment.	At the end of 35 days still some running.
7	G.	Not ascertained.	....	Purgatives.	Ditto.	At the end of 13 days still some discharge.

[1] Op. citat., p. 31.

[2] Practical Observations on the Cure of Gonorrhœa Virulentain Man, p. 96. 1801.

[3] An Essay on the Cure of the Gonorrhœa, p. 13. 1771.

12. *Aperients.*—Aided by injections, aperients will effect quite as much as the most torturing and depressing purgatives; and could we but discriminate the cases at the outset, it would in many instances not be necessary to do more than prescribe these two remedies. But this is impossible. It will constantly happen that in very healthy-looking persons gonorrhœa becomes so severe or obstinate under this plan of treatment, that other means have to be resorted to after a considerable waste of time and money. Nay, it will occasionally happen that the very same patient, apparently suffering from the very same form of the disease, can be cured at one time by these simple remedies, and yet at another require all our resources. Besides, this plan is slow and uncertain, even when injections are used.

I give below a table of cases thus treated. I could easily add to the number, but resist the temptation, as the returns agree so closely with those previously obtained. And here I may observe that the reader will probably enough object to these tables as embarrassing, superfluous, and difficult to carry in the mind. My answer is, that they cannot be dispensed with; that the object in this work is to separate, as far as I can effect it, *certainties from uncertainties.* It appears to me that this is the first step on the true road to knowledge, and that, without such a method there can be no real progress. The number of opinions and the aggregate amount of experience may indeed increase, but such increase can only augment the difficulties of those who essay to analyze the mass and extract the truth from it. I therefore hold that the only plan is to reduce observations to such a form as will not merely admit of their being clearly comprehended and easily tested, but will reduce almost to a minimum the imputation of any vagueness. When observations are impartially digested down into figures, we can deal with them better than in any other form I know of.

TABLE IV.

Cases treated with Aperients.

	Name.	Days previously ill.	Character of the disease, and previous treatment when ascertained.	Treatment.		Date of final disappearance of the discharge.
				Medicines.	Injections.	
1	R. M. K.	....	....	Salines, carb. of soda and pulv. jalap.	None.	Left at the expiration of 13 days, in no way improved.
2	A. R.	10	....	Saline powder, consisting of pulv. rhei. pot. nit., and sulph. magnes.	Sulphate of zinc 3 i. to Oj.	At the end of 35 days the discharge disappeared, but returned immediately on leaving off treatment.

	Name.	Days previously ill.	Character of the disease, and previous treatment when ascertained.	Treatment.		Date of final disappearance of the discharge.
				Medicines.	Injections.	
3	J. S.	30	Complicated with rheumatism.	Saline powd. consisting of pulv., rhei. pot. nit., and sulph. mag.	Sulphate of zinc ʒ i. to Oj.	Cure complete in 19 days.
4	J. B.	21	....	Pulv. sodæ c. jalap.	None.	On the 25th day only a slight gleet remaining.
5	H. B.	Not ascertained.	....	Pulv. salin. pot. nit. c. pulv. antim.	None.	On the 35th day the discharge was still bad.
6	J. R.	Ditto.	....	Pulv. sod. c. jal., pulv. salin., mist. salin., followed by tincture of steel.	None.	On the 34th day there was still some scalding, accompanied by purulent discharge.
7	J. C.	Ditto.	....	Pulv. salin.	Sulph. of zinc.	At the end of 75 days there was some improvement. He now took no medicine for 35 days, during which time there was no further alteration in the disease.
8	W. B.	....	Apparently from overwalking.	Dilute sulphuric acid and aperients.	None.	The discharge ceased on the 3d day.
9	....	30	He had drunk beer, and tried to cure himself with salts.	Pulv. salin. Restricted diet.	Sulph. of zinc.	Cured by the 35th day; the scalding ceased on the 6th day.
10	A. D.	30	He complained of the scalding being very severe.	Pulv. salin.	Ditto.	By the 21st day the scalding had nearly ceased, and by the 25th the discharge was gone.
11	....	3	Not very severe.	Pulv. sod. c. jal. No restriction in food or drink.	Lotio saturn. to the penis.	On the 30th day there was still some purulent discharge.
12	A. S.	Not ascertained.	....	Pulv. sod. c. jal.; mist. salin.	Ditto, followed by injec. of sulph. of zinc.	On the 39th day there was still some purulent discharge.
13	W. S.	....	....	Pulv. sod. c. jal.; pulv. salin.	Lotio saturn. as an injection.	On the 61st day there was still some purulent discharge.
14	A. S.	4	....	Pulv. sod. c. jal. No restriction in diet.	Ditto.	On the 16th day almost all well.
15	A. H.	4	....	Ditto.	Ditto.	No improvement at the end of 33 days.

	Name.	Days previously ill.	Character of the disease, and previous treatment when ascertained.	Treatment.		Date of final disappearance of the discharge.
				Medicines.	Injections.	
16	D. F.	6	....	Pulv. sod. c. jal. No restriction in diet.	Lotio saturn. as an injection.	At the end of 14 days there was but little improvement.
17	R. K.	90	He had taken copai. and catechu, and used injections.	Pulv. salin.	Lotio saturn., and after 24 days sulph. zinc.	Cure in 78 days.
18	S. C.	7	...	Pulv. sod. c. jal.; salines.	Lotio saturn.	On the 30th day the chordee had ceased, but scalding and discharge were present.
19	E. S.	90	Very mild.	Pulv. salin.	Sulph. of zinc.	Cure in 4 days.
20	M. J.	42	....	Ant. and salines.	Ditto.	Cure in 30 days.
21	B. B.	42	Cubebs in mixture.	Pulv. salin. Not restricted in diet, drank beer.	Sulph. of zinc	On the 40th day there had been no discharge for a week; there was still some smarting on making water.
22	J. P.	270	Thick white discharge, no chordee; lived regularly, took medicine, and no malt liquor.	Pulv. salin. tinct. of steel.	Lotio saturn.	On the 49th day there was still some discharge.
23	W. C.	3	....	Pulv. salin. Drank beer.	None.	No improvement at the end of 33 days.
24	A. S. K.	6	....	Pulv. salin.	Sulph. of zinc.	In 12 days had diminished to a gleet, and a few injections completed the cure.
25	H. C.	3	....	Pulv. salin.	Ditto.	Cure in 43 days.
26	G. W.	24	....	Pulv. salin., followed by copaiba and turpentine.	None.	Cure in 16 days.
27	H. H.	Not ascertained.	Said to be non-venereal.	Pulv. salin.	Sulph. of zinc.	Cure in 12 days.
28	J. S.	60	Copaiba and injections.	Pulv. sod. c. jal.	Ditto.	Cure in 12 days.
29	S. W.	Not ascertained.	Said to be from a strain.	Ditto, and tinct. ferri ℳ. xx. ter die.	None.	On the 37th day there was still a slight gleet, when the tincture was commenced. Cure in 8 days more.

Here, then, with the exception of four cases, one of them (Case 8) being very likely not gonorrhœa at all, where I began injecting within the first fortnight, the results were of the most unsatisfactory kind. Many of these patients were as bad as ever at the end of thirty, forty, or fifty days, and the treatment had to be exchanged for something more calculated to effect a cure. A few slowly recovered ; and some, who thought the disease gone at the end of a long course of medicines, found it return so soon as ever they left off treatment. The objection urged against copaiba and cubebs holds good here. When once a case proves refractory, no further benefit seems to arise either from increasing the dose or persevering in the use of aperients. Of this, practice affords us every day the most convincing proofs ; and there is perhaps no surgeon, however limited his sphere of observation, who has not seen cases in which patients, attempting to cure themselves, had persevered for months in the employment of these remedies without even materially relieving the disease.

13. *Diuretics.*—The principal diuretics prescribed in gonorrhœa are the spirit of nitric ether, nitrate and acetate of potass, and liquor potassæ ; though perhaps the latter ought only to be classed exceptionally under this head, being an antacid. I could never quite satisfy myself about my own reasons for using them, although I am always glad to avail myself of their employment. A moderately increased action, however, of the kidneys seems so generally to alleviate the disorder, that these remedies have been admitted into almost every plan of treatment. The spirit of nitre is perhaps the most unexceptionable and pleasant to take, as it rarely offends either the taste or the stomach, and even when not beneficial never acts injuriously. As to the nitrate of potass I must give a more qualified opinion, and in the section on scalding, in a later chapter of this work, it will be seen that it was given to the extent of six drachms a day without producing the least effect either on the disease or scalding. The acetate is unquestionably, I think, a much more powerful remedy as an adjunct. It was first introduced, I believe, by Mr. Hilton to the notice of the profession as a remedy for gonorrhœa. Long previously I had used it extensively, but I had ceased to place any reliance upon it as a specific, and this is really the only decision I could arrive at. A close scrutiny of Mr. Hilton's cases will, so far as such a small number can prove anything, prove this assertion. In the first case the discharge ceased within sixteen days ; in the second on the eighth day ; while in the third instance no very material improvement took place for the first fifteen days, and it required thirty-nine days to subdue the scalding and discharge. Even then the cure was not complete. Liquor potassæ exerts a good deal of control over the purulent discharge, and in women it often, combined with bitters, acts better than remedies which prove more powerful in the male.

14. *Alteratives.*—This part of the subject need not detain us long, and indeed, but for a rather recent profession of faith in the practice, I

should not have mentioned it, as I suppose the treatment of gonorrhœa by means of such medicines is, with a few rare exceptions, consigned to desuetude in this country. But it is not so in France. Mr. Lee says [1] that M. Baumés and M. Lagneau are in the habit of treating obstinate gonorrhœa by means of a mercurial course, and with success, the explanation of which is that the gonorrhœa is syphilitic. Nor do these gentlemen stand alone among French practitioners. Mr. Lee himself clearly leans to this belief, and considers that the discharge, from which Hunter inoculated himself, was of this nature and not chancre larvé. Although I have watched, with all the care I could bestow, every case bearing upon the genesis of syphilis, I have never met with any fact showing that it originates except from some recognized form of syphilis itself. I never saw the plan tried but once ; then, however, it was put in force so efficiently that the patient was badly salivated, but without the gonorrhœa being in the least affected either one way or the other. Of the treatment with corrosive sublimate recommended [2] by Dr. Bruck I have no experience, nor does it seem desirable to try a medicine the action of which is, according to him, attended by so many drawbacks, and which only effects a cure in six weeks.

The iodide of potassium, one of the most powerful alteratives in proper cases, has been repeatedly made a subject of discussion, as a remedy in gonorrhœa. It is, however, inert for such a purpose, except in so far as the potassium may act in the same way as the liquor potassæ does ; and any benefit which arose during its use was probably due, either to this cause, to some other part of the treatment, or to the natural tendency gonorrhœa sometimes shows to get well of itself. In a paper by Mr. C. Cornwall, in the fifteenth volume of the *Medical Gazette*, it will be seen that the author's success in treating gonorrhœa in this way amounted to effecting a cure in thirty-four days, which does not show the plan to be unusually efficient. I assume, however, that faith in the virtue of the iodide, if it ever really existed, is about as extinct as that in venesection.

B. External Applications.—For the sake of accurate examination it will be best to divide these into—1, cold applications, as ice and evaporating lotions ; 2, warm applications, as hot fomentations, baths, etc. ; and 3, sedative applications. We may thus ascertain their comparative value, and see if there are any fixed rules to guide us in making use of them.

1. *Cold Applications.*—How far cold evaporating lotions, particularly when used as they generally are, act beneficially in checking the pain and inflammation and in abating the heat felt in the penis, and, indeed, in any inflammation where a mucous membrane is implicated, is a question which I consider to be perfectly undetermined. As yet there is nothing more than individual conviction to show that, were equal numbers of patients

[1] St. George's Hospital Reports, vol. vi., p. 48.

[2] Central Blatt für medizinische Wissenschaft, July 1, 1876. Quoted in Medical Times and Gazette, vol. ii., p. 163. 1876.

submitted to the same treatment, those who were in addition treated with cold applications would derive more benefit than the others; and therefore, until some evidence of this kind can be produced, the patient should not be subjected to the trouble and expense of using them, and a fair trial should be made to see if the rest generally observed is not the real source of relief. My experience is that they are valueless.

2. *Hot Applications.*—Ricord condemns the hot bath, as Howard did long previously,[1] as being liable to promote the outbreak or occasion the reappearance of the discharge.[2] Fournier maintains[3] the same opinion about any bath. With respect to such a contingency, I would remark that it may be a very possible occurrence in France, among the rather inflammable youths seen occasionally at the Hôpital du Midi, in whom I should say being affected with gonorrhœa was rather the normal state than otherwise; but so far as my own observation goes, I never saw or heard of an authentic instance in which hot baths exerted any prejudicial influence over the course of gonorrhœa.

Prior to bringing out the first edition of this work I made a careful series of observations, and could not verify these opinions about the injurious effect of hot baths in a single instance. Blank forms were prepared like the following, and mostly filled up only from cases seen every day; and it may perhaps save some repetition if I state here, that all the remedies, spoken of in this work as having been tested by myself, were experimented upon in this way.

Form for Calculating Action of Remedies.

Name	A. B.	
Date		
Feels	Better.	Worse, etc.
Discharge	Lessening.	Increased.
Chordee	Much the same.	Not lessened.
Erections	Troublesome.	More troublesome.
Bladder	Not irritable.	Irritable.
Urine	Acid.	Acidity lessened.
Bowels	Open.	Costive.
Tongue	Clean.	Foul.
Effects of medicine	Has made the running thinner; has acted freely.	Has not acted.
Effects of injections	Moderate heat on making water.	Pain and burning for two hours after.
Effects of baths	Thought it relieved scalding, etc.	Noticed no benefit.
General remarks	Patient on the whole progressing favorably.	No progress.

On such data alone was any reliance placed, and after destroying all the incomplete returns and computing the results, it was not found that

[1] Op. citat., vol. iii., p. 61. [2] Traité Pratique, p. 667.
[3] Nouveau Dictionnaire, tome v., p. 152.

the warm bath had ever induced the slightest unfavorable change in the character of the purulent discharge. Experience continually tends to ratify the verdict first arrived at. I had under me a patient who took quite forty baths, each one at 100°, and I was not able to detect the least exasperation of the disease.

But I believe the bath to be equally powerless for good, so far as concerns the cure of the running. It relieves the uneasy sensations in the urethra, perineum, and testicles which often depress patients, especially nervous persons and delicate subjects, but I never had reason to think that it shortened the duration of the gonorrhœa by an hour. In a report [1] of the cases treated at the Liverpool workhouse, it is stated that the use of the warm bath has been found to lessen the term of gonorrhœa in the female; Mr. Phillips, who seems to have been very successful in his treatment, recommends [2] that hot baths should be used every day for many hours; and M. Diday, who has had good opportunities for knowing what the success of M. Ricord's treatment has really been, and who is as much opposed to him on this point as one man can well be to another, carries the practice almost as far as Mr. Phillips. In the irrepressible stage, as he calls it, he advises several cold local baths a day. Should the symptoms become more pronounced, the patient is to take every second evening *a hot bath for an hour and a half at a time*, and two or three times a day a lukewarm local bath of mallow tea; in still more severe cases he recommends full-length baths *daily for two or three hours*, and multiplies the mallow-water baths. I suppose, then, these gentlemen have really found some benefit from the practice, but I can only adhere to what I have said; I admit, however, that it possesses one advantage; it must help to relieve the ennui entailed by confinement. A patient who has to spend two or three hours daily in a bath, and foment several times with infusion of mallow, to take a fair amount of medicine and two litres of ptisan, has a nucleus of useful occupation provided for him.

Contrary to the opinion of the observers just mentioned, I have seen ground for thinking that all the beneficial effect of the practice may be attained by a stay in the bath of two minutes. Thus restricted, I constantly employ it, particularly when the patient suffers much from scalding, or is very sensitive to the action of injections. I always recommend that it should be taken on an empty stomach, that the heat should be quite 98° to 100° Fahr., and that, if the weather be very inclement and the patient liable to catch cold, he should have the bath in the evening and go straight home after it, remaining there till next day.

But the external application which I like best, and which is at once simple and useful, while it is more attainable and less expensive than

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[1] Medical Times and Gazette, vol. ii., p. 335. 1861.

[2] A Treatise on the Urethra, etc., p. 88. 1832.

the hot bath, is that of very hot water to the penis. To do any good, however, the water must be hot, not lukewarm, and when the case is very severe, it should be used at such a temperature as to make the penis quite red. When thus employed, and especially in the earlier stages of the disease, the weight felt about the testicles soon disappears, the pain on making water and using injections is soothed, and the glans and prepuce lose their unhealthy appearance.

The best plan of employing it is, I think, the following: The patient should stand over a slop-pail, holding a small basin brimful of very hot water in his left hand. With the right hand he should lift up the penis by the skin of the upper part, and just allow the lower surface to come in contact with the fluid, which must be of such a temperature that the patient cannot bear the contact of it for more than an instant at a time. When there is uneasiness about the perineum, he should roll up a piece of rag, flannel if possible, into a ball about the size of a walnut, tie this firmly to a small piece of firewood, dip the ball in almost boiling water, dash off the drops, and press it against the perineum; or sit lightly down upon a sponge, just taken out of boiling water and put on a cane-bottomed chair over a slop-pail. This practice, recommended in the earlier editions of this work, has since then received the approval of Bumstead,[1] Durkee,[2] and Lee,[3] who distinctly state that its merits have not been overrated.

Were it no way superior in its effects to other applications, it would far surpass them in point of convenience. No smell, no mess, no cumbersome apparatus. A piece of sponge, or a rag, and a little hot water suffice.

3. *Sedative Applications.*—This simplicity, on which its value is in some measure dependent, vanishes the moment we essay to increase its efficacy, by adding such things as decoction of poppies, solution of opium, laudanum, etc. Now as one grain of opium taken internally will really allay any pain the patient may feel more effectually than the most elaborate messes, I should be glad to know if it is not high time that the employment of such filthy concoctions should be summarily put down. Why will surgeons persist in trying again and again some useless compound which has failed a thousand times, which can only add to the patient's discomfort, complicate treatment, and waste time; which must dirty the linen, sheets, etc.? Is it because routine, tradition, and authorities say that something of this kind must be done?

I wish some of our physiologists would condescend to be useful, and, leaving off the elaborate experiments on dogs and cats, frogs and guinea-pigs, would try at least to give us a satisfactory explanation of some matters we know very little of, such, for instance, as the action of heat and cold on inflamed surfaces. All I have been able to make out is, that in slight

[1] Op. citat., p. 79. [2] Op. citat., p. 32. [3] Op. citat., p. 207.

inflammations cold is often more beneficial than heat, especially if the mere outward surface is inflamed; but if deeper structures be involved, the application of heat is more useful. Even here there are contradictions I have never seen explained. For instance, if the penis be exposed to cold air during the acute stage of gonorrhœa, an exacerbation is apt to follow, but if the organ be kept cool and moist, the very opposite result ensues; again, if it be kept too warm, an aggravation of all the symptoms, especially of the chordee, sets in, while the free use of scalding hot water materially relieves all this, and is invaluable in such complications as perineal abscess and sympathetic bubo. Prolonged application of cold water to the interior of the urethra has undoubtedly been of service in gonorrhœa. Evaporating lotions seem to have no effect on this disease, yet, in the wide field of inflammations, I do not know of one that is affected by any remedy so quickly and certainly as orchitis is by these very compounds. In mammary abscess an increase of pain is often induced by exposure to cold, but if warmth and moisture be applied, relief of the most gratifying kind is experienced. Heat and moisture have the same soothing effect upon whitlow, and under their influence the skin becomes cooler and less uncomfortable. Dry heat, such as that of a hot sun, especially if accompanied by much light, will often rapidly aggravate eczema; the heat of a furnace is frequently far less injurious in this disease than that of a cold wind, and sometimes appears rather beneficial. Some persons, suffering from eczema of the backs of the hands and wrists find that holding them before a bright fire till the skin is almost scorched gives great relief. Bathing an eczematous or erysipelatous surface with hot water seems to me useless or injurious, whereas this application, properly carried out, is of much service in many forms of inflammation, such as croup, peritonitis, suppurative inflammation of the cellular tissue, etc.

Are we to conclude that in some men the urethra, rectum, and adjacent parts are acted on in the same way by cold as they are in others by heat; or must we believe that, in certain circumstances, any great departure in either direction from the natural heat of the body is attended with precisely the same effect? It seems to me that some of the facts bearing upon the influence of great change of temperature on the urethra must demand one of these two solutions. Thus, Sir Benjamin Brodie says,[1] that a gentleman of his acquaintance, who was subject to attacks of retention from stricture, almost always began to pass urine after a pint of warm water had been thrown up as a clyster. I do not cite the effect of the hot bath on the same state, because its power has been disputed by very good observers; but I have seen the urethra yield to a sudden application of almost boiling water to the penis, after holding an instrument with such firmness that I could not withdraw it till the water was used, when it relaxed directly. I should

[1] Works, vol. ii., p. 417. 1865.

have thought that such facts as these, which any man of great experience could verify for himself, proved that heat does exert a relaxing influence over spasmodic tightening of the urethra. Yet Mr Teevan, in a paper read before the Harveian Society, recommended, in spasmodic retention of the urine, that the rectum should be plugged with ice, as a potent means of overcoming the spasm; and Sir Thomas Watson says[1] that "in cases of external inflammation, sometimes cold applications are found to be of use, and sometimes warm."

C. Direct Applications. 1. *Injections. Variety of Substances Used.*—A list of the substances recommended for injections within the last few years would perhaps show, more strongly than anything I could say, the discrepancy of opinion that prevails as to which is the best. I therefore give a selection: chloride, tannate, and acetate of zinc, carbolate of zinc, sulphocarbolate of zinc, sulphate of zinc, curing as a rule on the third or fourth day, or even sooner; nitrate of silver; acetate of lead; sulphate and chloride of copper; the four sulphates (a combination of alum, zinc, iron, and copper); iodide and potassio-tartrate of iron, iodide of iron in combination with iron filings, tincture of sesquichloride of iron, solution of perchloride of iron, solution of persulphate of iron; oxychloride of tin combined with phosphate and tannate of tin: trisnitrate of bismuth; pernitrate of mercury, perchloride of mercury; chloride of soda; chlorate of potass, carbolate of potass, carbolic acid and potass, permanganate of potass, which was said to cure recent attacks of the disease in from one to two days, and only failed twice in 64 cases, being just one day less than was requisite to effect a cure with the chlorate of potass, a period subsequently extended to twelve days for recent cases alone; Condy's fluid; alum, tannate of alumina, succeeding, according to one author, where all the usual injections had failed, and described by another as not more efficacious than other kinds of injections; lime-water, chloride of lime, bisulphite of lime; sulphate of cadmium, recommended as calming very rapidly the acute period of blennorrhagia; tincture of iodine, recommended as having never failed during a ten years' trial; nitric acid combined with strychnia; sulphurous acid, curing "in an average of six days;" tannin, glycerine of tannin, singly and combined with olive-oil and mucilage; glycerine, combined with carbolic acid and tannin; glycerine and starch; quinine and glycerine; matico, subsequently denounced as the last medicament of the kind we should have recourse to; eucalyptus emulsion, used, along with boracic acid, to supplement soluble bougies; starch; tincture of catechu, solution of catechu in syrup of tolu; tincture of rhatany, extract of rhatany; vinum opii, tincture of opium, watery extract of opium, opium and glycerine; decoction of poppies; acetate of morphia; belladonna; infusion of linseed; chloroform; hydrate of chloral, intro-

[1] Principles and Practice of Physic, vol. i., p. 250. 1857.

duced at least two or three times; tincture of aloes; hydrastin; leptandrin; red wine; copaiba, volatile oil of copaiba, repeatedly tried in vain at the recommendation of previous observers, copaiba water, far more efficacious than the drug taken internally; honey; green tea; wine; ice-cold water, lukewarm water, not known to have failed "where the system was adopted at the commencement of the disease and followed throughout," warm water, recommended as curing in from seven to nine days; earth and water, often curing in two or three days; kaolin and water; and retention of the urine by means of a kind of forceps (*pince*). Though the last can scarcely be considered as an injection it is intended to act in the same way. The reader will be interested to observe that substances of the most opposite nature are equally efficacious in effecting the desired purpose; curing the case with fabulous rapidity, never failing, and entailing no disagreeable results whatever.

I do not know what he thinks of all this, but to me it is unsatisfactory in the highest degree. A series of careful experiments, prolonged for at least sixty or seventy years, would be required to examine with anything like accuracy the comparative value of the different substances here recommended. I say this quite deliberately, for it took me more than two years, at a time when I was not overburdened with private practice, to satisfy myself, even imperfectly, as to the relative power of three drugs only, namely, the sulphate of zinc, acetate of zinc, and the nitrate of silver.

It is certain that there must, only too often, have been a serious mistake as to the real facts of the case, and that the substances so highly recommended do not possess the virtues ascribed to them. How otherwise did it happen that very competent observers entirely failed to achieve any such success, and that we find such an ominous silence about drugs once vaunted as specifics? Take the history of permanganate of potass, for example. Is has been recommended by at least five or six writers, some of them quite in position to judge of its value—Dr. Rich, of Canada;[1] Dr. Warden, of Haulbowline Hospital; Dr. Van Versen, of the United States Army; Mr. Macfie Campbell, of the Dreadnought Hospital, etc. It has been extolled by one author as curing in from one to two days, by another as curing even old cases of forty-five days' average duration in two to ten days,[2] while the failures, taking all the cases together, do not amount to more than one in forty. It is equally adapted to all cases, old or recent, and possesses, in addition, the valuable property of being painless in its operation, or only occasioning very slight inconvenience even in pretty strong solution.

Such being the case, the permanganate ought to take rank as the paragon of remedies for gonorrhœa. Nothing that I have experimented with

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[1] Edinburgh Medical Journal, September, 1864.

[2] Lancet, vol. i., p. 73. 1871.

approaches it in point of efficacy, and the mystery is that a substance of such power has not come into universal favor, and indeed banished at once every other drug, seeing it would be little less than criminal to go on ordering antiphlogistics and specifics, when we possess a simple and painless remedy, which puts an end to the complaint in six and thirty hours. But now let us hear the other side of the question. According to the evidence here the permanganate, so far from being either a painless remedy or a specific, is quite the contrary. Gentlemen worthy of credit distinctly state that its action on the urethra is so strong as to entirely deter patients from continuing it. Used in solution a little more than a fourth of the strength recommended as painless, it has been found to give so much pain as to necessitate its abandonment. Mr. Berkeley Hill reports[1] that it has been tried rather extensively at the Lock Hospital, and that very few patients have derived benefit from it, a statement corroborated, as far as one case can go, by another contributor to the same journal;[2] while Dr. Fessenden Otis says[3] he has used this salt in perhaps twenty cases, with the apparent effect of arresting the discharge for a short time, but that he has "invariably been obliged to resort to other means to complete the cure."

We hear a great deal about medicine being an inductive science, but in so far as the therapeutics of gonorrhœa are concerned, the state of matters which has just been laid before the reader is, in some particulars, much more on a level with fortune-telling, or the prophecies in Moore's Almanack, than with science in the proper sense of the word. The reader may think this is going too far; perhaps it is, but the real authors of this confusion, the medical men who ushered so many useless things into public notice on such insufficient grounds, first of all went a great deal too far in the opposite direction; and to recommend, in a disease like gonorrhœa, which will often disappear under a few cold water injections, a remedy on the strength of its having been successful in some few cases, as has repeatedly been done, looks to me quite as haphazard as palmistry or weather-wisdom.

I do not wish to convey the impression that it is always so. On the contrary, I am anxious to bear testimony to the value of many contributions on this subject, and in particular to the labors of Mr. de Méric, who examined the action of a remedy in 140 cases before bringing the subject under public notice.[4] The substance experimented with was the trisnitrate of bismuth. A special register was kept of all cases, but owing to the neglect shown by the patients themselves, Mr. de Méric was only able to obtain an account of the results in 52 instances. Out of the 52 there were

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[1] Lancet, vol. i., p. 570. 1871. [2] Ibid., p. 35.
[3] New York Journal of Medicine, vol. i., p. 359. 1870.
[4] Lancet, vol. i., p. 468. 1860.

36 cured, 5 much better, and 11 not improved at all. Even in those cases which were cured, the patients remained on an average two-and-twenty days under treatment, and this, so far as the injections were concerned, did not begin till the inflammatory stage had subsided. But though the result of the trials was not satisfactory, the author deserves our praise for the candor with which he states this, and the pains he bestowed on the subject; his paper is of infinitely more value than the vague generalities we often meet with in books, or hasty encomiums which crumble into nothing at the first touch of experiment.

I think I am not going too far when I say that the introduction of some of these substances, such as honey, chloroform, quinine, tincture of aloes, creasote, *et similia*, must be ascribed to some defect in the reasoning powers of the persons who first recommended them, and that any one who could expect to derive benefit from the use of these remedies must be incapable of forming a sound view of therapeutics; for what property is there in any one of them which would lead us to infer that it could possess the least power of controlling such a disease as gonorrhœa, or even modifying purulent inflammation of any kind? Only practical experience could of course prove they were worthless; as might have been expected it did so whenever these wretched tricks were put to the test, but it proved at the same time that they were often most injurious. Some of the persons injected with chloroform suffered severe pain, amounting, it was said, even to agony, for hours, *followed by copious discharges of blood from the urethra*, and any person who has suffered from the contact of chloroform with his lips knows how severe the pain is which it occasions, and will appreciate the torment these unfortunate patients must have gone through. The profession ought, in my opinion, to have visited with equal reprobation those who perpetrated such shameful experiments, and the journals which lent them the sanction of their columns. I beg to record this as my deliberate opinion. To give, as a mere experiment, an injection producing frightful pain for hours, and copious discharge of blood, is in my judgment a most scandalous act, and if the reader will kindly hold a teaspoonful of one of these chloroform injections in his mouth for a few minutes he will, I think, be of my opinion. I dare say these abominable tricks now and then effected a cure, and so would, perhaps, an injection of pure sulphuric acid, or a red-hot wire, with the additional advantage of preventing any new infection by closing up the urethra.

Seeing that I never heard an opinion on the subject expressed by any one, I am ignorant whether people think the evil of this dissonance of opinion is past cure, or is so slight a matter as not to require anything being done for it. To me it seems that the introduction of such a host of new remedies, and the irreconcilable difference of opinion as to their value, are proof enough that there is some vital defect in our present method of trying to get at the truth. The basis on which our principles of treatment

rest must be, indeed, ready at any instant to crumble under our feet, if all the teachings of authority and experience are liable to be overturned, at once, in favor of some new remedy which has not been tested in more than three or four instances. In some cases in the literature of gonorrhœa, there was scarcely even this ground for recommendation, as even a most cursory examination left it very doubtful if the substance in question had exerted any influence whatever; *e.g.*, the evidence about honey and chloroform was of this class; but if we are ever to attain anything like accuracy in medicine, it will be absolutely necessary to have a better system of recording cases, the best that I can suggest being what I first suggested quite thirty years ago, *a school of experimental medicine*, with a system of registration for correcting errors of observation.

The disagreement as to the comparative value of different substances for injection has, perhaps naturally enough, extended itself to the strength in which they are to be employed, especially with regard to the nitrate of silver, the recommendations about which exhibit such a variety of opinions, that it is quite impossible to understand how men can have arrived at conclusions so diametrically opposed. Thus, for instance, while some surgeons find an eighth, a quarter, or half a grain of nitrate of silver to the ounce quite strong enough, others have not hesitated to use solutions of a scruple,[1] or even half a drachm,[2] in the same amount of fluid; and it has been recommended [3] to inject a solution of twenty grains to the ounce not merely once, but as much as twice or even thrice in the twenty-four hours. Even this heroic treatment was not active enough for those surgeons who advise that the solid nitrate should be employed.

Cold Water Injections.—But whatever the merits or demerits of the numerous substances and systems just passed in review, they ought now to become things of the past, the progress of that oblivion, which sooner or later conducts most of them to one common tomb, having been not only accelerated in its speed but extended in its sphere of operation by a discovery which threatens to supersede all former treatment and to extinguish all interest in the pathology of gonorrhœa; for who would waste his time in studying a disease which is almost always cured at a single sitting, and never lasts more than a few days? For such are the results obtained by Dr. Morris, of Kentucky.[4] He introduces a catheter with a large olive-shaped bulb, the latter being pierced at the shoulders and closed at the point, so that the fluid injected flows outward and backward, not into the bladder. The catheter being introduced, a pump-syringe is connected with it, and about a gallon of water is pumped into the urethra; after this a solution of sulphate of zinc is injected by means of a "penis syringe."

[1] Judd: Op. citat., p. 6.

[2] Outlines of Military Surgery. By Sir George Ballingall; p. 513. 1855.

[3] Berkeley Hill: Op. citat., p. 387.

[4] Southern Medical Record. Quoted in British Medical Journal, vol. i., p. 194. 1882.

The results are miraculous. Out of twenty-five cases twenty-two were cured in twenty-four hours; one in three days, and another in seven; while that of a drinker, who continued his evil courses when under treatment, resisted the magical power of the remedies for fourteen days.

I at once admit that I never heard of any success comparable to this; the achievements of the injections which cure in two or three days fade into insignificance before such results; and gonorrhœa may now be struck out from the list of troublesome disorders. When I was studying this disease in the hospitals, and through the kindness of some friends had access to a practically unlimited number of out-patients, I never once saw two successive cases cured in the same space of time; and never saw many cases of recent infection in succession without meeting with one, where the urethra was so inflamed and tender, that the most gentle introduction of the silver tubed syringe was followed by great pain and faintness, neither of which seem to have occurred in Dr. Morris's practice.

The method was, however, tried long since, Mr. Windsor tells us,[1] first apparently by M. Reliquet, who as far back as 1866 recommended continuous irrigation by means of a small catheter, kept up for half an hour to two hours; then three years later by Dr. Hewson, who employed a double catheter; in 1870 by Mr. Durham, and again in 1871 by Mr. Windsor,[2] who used an enema ball and tube, the ivory end being replaced by a glass cylinder, by means of which he irrigated the first three or four inches of the urethra with cold water or weak solution of permanganate of potass, the results being highly satisfactory.

Can Injections bring on Stricture and Orchitis?—To this pertinent inquiry the most unhesitating denial may be given, provided the injections be suitably used. Stricture occurs by far the most frequently among those who have been treated only with medicines, or with medicines and injections given in a very inefficient manner, and is so rare among those treated with injections *properly given*, that in the course of many years I have never been able to trace a single case to this source. Mr. Phillips found[3] that, while out of 119 cases 117 had been preceded by urethral discharge, astringent injections had only been used in 49 out of the latter set of cases.

One would suppose that those surgeons who object to their use on this ground would have adduced some facts in proof. All these disorders are so common that, with ordinary industry, any writer might have accumulated materials enough to support his views. But, instead of doing this, they content themselves with detailing their fears of *what ought to follow;* they never appear to dream of relying solely upon a critical analysis of what *has followed* the use of such means, and seem entirely to have lost sight of the fact that the evidence of some of our best observers, of men like Hunter,

[1] The Liverpool and Manchester Medical and Surgical Reports, p. 16. 1873.

[2] The Manchester Medical and Surgical Reports, p. 52. 1871.

[3] Op. citat., p. 226.

Whateley, Babington, and Ricord, is to the effect that contraction of the canal does not result from their employment.

One source of error often meets us here. A patient contracts a gonorrhœa and uses injections for it, perhaps also takes copaiba, cubebs, or something of that kind. After a time the disease gets well. By-and-by the patient contracts another infection, and this, or perhaps a third, fourth, or a fifth proves obstinate; the surgeon passes down a bougie and finds a stricture. Now any one who sees many of these cases is apt, however impartial, to think that, after all, there may be some truth in the patient's opinion that the narrowing was brought about by the injections. And this much must be conceded. In very irritable systems *over injecting* with quite a short syringe may stimulate distant portions of the urethra, and possibly lay the foundation of stricture, *even though not a drop of the fluid ever goes near the site where this afterward springs up.* Thus I was consulted by a gentleman who had been under the care of a well-known surgeon. The surgeon had ordered him a very mild injection of nitrate of silver, which the patient had, on his own responsibility, made much milder, reducing it to about one-eighth of a grain to the ounce. This he threw up several times daily, and then, as the disease did not get better, came to me. The symptoms did not seem to have ever been severe, and there was clearly not much the matter with him. I therefore wanted to give him an injection of a grain to an ounce, and to use it myself, so as to try if I could end the affair at once. He did not so much object to the strength of the solution, as to the idea of any person but himself inserting an instrument into his urethra, and I had to content myself with letting him use the injection, which he assured me he could do perfectly well. I found, however, that he only allowed the point of the syringe to go about a third of an inch down the channel of the urethra, and that the whole of the fluid streamed out as fast as it was thrown in. I told him it was no use to inject in that way, but he was convinced that the method had so far worked well, and that it would suffice for what remained of the disease, so he continued it.

A few days after I received a letter from him, saying he was suffering from great irritability of the bladder and difficulty in making water; he therefore asked me to see him at once. After he had taken a hot bath I passed down a number eight gum elastic bougie. About four and a half inches down the instrument encountered a very tender spot, and there was some difficulty in getting farther. It was here, the patient said, that he found the obstacle to making water. After twice passing the bougie I detached, almost certainly from this spot, a clot of mucus as large as an extremely small nut. It was ragged in outline, grayish, and speckled with a darker color, much as we see in patches of mucus expelled from the trachea. The extrusion of this mucus was succeeded by speedy relief, and passing the bougie once or twice more, followed by a couple of injections with a long syringe, completed the cure.

Now I consider I am warranted in assuming that, in this case, the injection aggravated a slight, localized inflammation, already existing at the part of the urethra from which the mucus came away. The symptoms were more severe, and rose more rapidly to a height than happens in such cases when no injections have been used. But I think it is pretty clear that what mischief was done by the injecting must be put down to the irritation set up at the mouth of the urethra, and not to the action of the fluid, as none of it could have reached within four inches of the tender part. I think too, after weighing all the circumstances of the case, that it is very probable stricture might have sprung up at the spot from which the mucus came. Some amount of temporary narrowing had indeed already begun.

A gentleman, who had previously suffered severely from gonorrhœa, contracted a fresh discharge while travelling in Belgium. Desirous to cut it short as quickly as he could, he procured some "bru" and injected it several times a day with a short syringe. At the end of a few days he began to suffer from extreme irritability of the bladder, difficulty in making water, bleeding after micturition, dull pain over the loins, languor and loss of appetite. In this state he returned to England, and almost directly after his arrival consulted me. I found him very low, with a weak quick pulse, a thickly coated tongue and almost total loss of appetite. A specimen of urine, which he brought, was almost chocolate colored from hematuria, and this state of the fluid continued for nearly a fortnight. A number six bougie passed with great difficulty. Two or three years previously I had several times passed a large sized instrument with ease.

I could add more cases, of which I have seen several, but I pass on to the consideration of another fact of which I have also seen several instances, which is that over-injecting with a short syringe will sometimes bring on spasmodic stricture, great irritability of the posterior part of the urethra, and a good deal of constitutional disturbance, even when there is not and has never been any gonorrhœa. Thus a gentleman was recommended to inject himself, for spermatorrhœa, with the long urethral syringe ; but not feeling at all assured as to the possible results, he left out the detached tube and injected with the syringe only. He had only done this "once or twice," according to his account, "at an interval of a day or two," when he was attacked with pain about the prostate, considerable difficulty in making water, great disturbance of general health, loss of appetite, headache, and vomiting.

Of course there are many cases to which such an explanation as that given of the first case would not apply ; those for instance where the nitrate solution is applied all over the urethra. Here I believe the explanation of the problem is to be found in the inability of nitrate of silver to cure gonorrhœa without the aid of other means. My conclusion would be, that the contraction is not caused by the employment of the nitrate, but that *it invari-*

ably ensues in a certain percentage of cases when treatment fails to arrest the discharge.

In five cases I have traced stricture to the abuse of chloride of zinc injections, and twice to over-strong injections of the perchloride of mercury. My reasons for ascribing the contraction here to the injection are, that in every instance the fluid used was either so strong, or thrown in so often, that severe pain and difficulty in making water were set up *at the time ;* and that, also, in every instance, on the subsidence of these symptoms, a bougie was passed and narrowing was found to have begun.

If injections bring on orchitis, how is it that they scarcely ever produce this effect when given within the first fortnight from the breaking out of the disease—the very time when they induce the most pain? M. Diday and M. Ricord have never seen this complication before the fifteenth day,[1] and I have not observed it in my practice so early as this in a single instance, though M. Le Fort noticed it[2] twenty-four times during the first week out of six hundred and forty-five cases. If the strength of injections is the object to be dreaded, how does it happen that, in the cases mentioned in Table V., where eighteen persons were treated with solution of nitrate of silver, ten grains to an ounce, no symptoms of orchitis were induced in any instance—a result I have since repeatedly verified, not indeed altogether from my own practice, for I have always dissuaded patients from such a step, but from observing the effects in the hands of others?

I must now, upon the lowest calculation, have given with my own hands injections of nitrate of silver several thousands of times in gleet and spermatorrhœa, and as I have not yet seen orchitis or stricture arise from doing so, I am inclined to think that such a result is not to be expected when the operation is properly performed.

When a patient has neglected a gonorrhœa for some time, say three or four weeks, or has been for a time trusting to medicines only, and in consequence of not deriving from them the benefit he expected, takes to injections, it will sometimes happen, that so soon as these are begun with orchitis comes on ; and I need scarcely say, that should this complication occur at any period when these remedies are being used, it is at once ascribed to their employment. I am rather disposed to think, that in some of those cases the use of the injection does hasten the appearance of the swelling, but that it cannot be considered as the sole, or even the chief, cause. Even as an exciting cause its agency must, I apprehend, be limited to this, that it calls forth *what would have happened spontaneously at a later date.* I have not found orchitis more prevalent under such circumstances than where medicines alone were trusted to ; and my experience is, that a certain percentage of this complication will happen under any system of treatment which does not cut short the gonorrhœa within a few days.

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[1] Exposition critique, p. 484.

[2] Medical Times and Gazette, vol. ii., p. 52. 1869.

In contrast to the authors who declaim so vaguely, Mr. Johnson gives us [1] something tangible. Out of the fifty-nine cases of orchitis which he quotes, sixteen were known to have used injections, and nine had taken copaiba. Out of thirteen cases of swelled testicle admitted into Guy's Hospital twelve had followed gonorrhœa. Of these twelve patients only one had used injections. Four of them had taken copaiba, but only one of them had succeeded in checking the gonorrhœa with it.[2] The remaining seven had neither used injections nor taken copaiba. Facts then, here, are against the supposition that these remedies possess any such power.

I presume it is unnecessary to discuss such questions as the power of injections to throw any infection into the system, or produce a metastasis of the disease,[3] or do harm by checking the purulent running. Such doctrines might do very well for a country nurse, or the feeble-minded class of persons who encourage homœopathy, or join anti-vaccination leagues ; but I need scarcely say that the opinions of such people, when utterly unsupported by truth, do not require discussion. Farther, I am not aware that the questions themselves have ever been supported by any reasons. Therefore as I shall have, later on, to examine the question of metastasis more fully, I pass by this part of the subject, simply remarking that what is really wanted, is not the putting an end to frivolous objections, but to the gonorrhœa, and that without giving pain, and in the shortest possible space of time. Long ago Hunter pointed out [4] that injections could not possibly drive the disease into the system, because the poison resides in the secreted matter.

A very similar kind of dread prevails about checking gonorrhœa at all in the acute stage. Mr. Johnson says that at this period of the disease "the more discharge the better." But it is certain that the more discharge the more extensively and severely is the urethra affected, and, *cæteris paribus*, the longer does it take to cure. Besides, it is utterly impossible to suppress a discharge except by means which make the membrane secreting it healthier, and it is difficult to understand how that can be injurious to the patient. Very strong remedies used for the purpose of trying to cure gonorrhœa may do mischief ; but it is because they set up pain and irritation, not because they stop the discharge.

We might, I think, deal in the same way with the question of not giving injections till the acute stage has passed off. Mr. Berkeley Hill, one of the most recent writers on this subject says [5] that "recourse to them should never be had until the acute inflammation has completely subsided," and I suppose it may be safely said that Mr. Hill is here the exponent of a wide-spread belief. But, even with authorities against me, I must maintain the opinion to be groundless. I have for years employed

[1] Op. citat., p. 197. [2] Guy's Hospital Reports, 2d Series, vol. viii., p. 467.
[3] Howard : Op. citat., vol. iii., p. 123.
[4] Op. citat., p. 77. [5] Op. citat., p. 402.

injections so soon as ever I could obtain the patient's consent to let me use them, and have never in a single instance had to regret doing so.

Nitrate of Silver.—Of all the substances ever yet employed for injections this is, to my thinking, the best. I have seen a great number of injections tried, and have one time or other tried a good many myself, but I have never observed any exercise such a marked control over gonorrhœa as a solution of nitrate of silver, properly given, and of the proper strength. Yet it is used by comparatively few practitioners, and it is no uncommon thing to hear surgeons say that they have given it up in consequence of failing so often with it, or from its bringing on stricture. The latter objection is, I think, already got over. The former merits decided attention.

I am not sure about the matter, but I believe the merit of first using this powerful remedy is due to an East-India surgeon,[1] who, being detained for some time "on the island Madagascar," about the year 1737, practised on the natives! Certainly

> "Illi robur et æs triplex
> Circa pectus erat."

He used to dissolve three grains in half a pound of soft water, and thicken it a little with powdered coral. But it was too bold a flight for the physicians of that day, and even for those of a later date, so that for something like a century afterward this valuable remedy remained almost totally neglected.

When aided by medicines and employed at the very outbreak of the disease, *and particularly in mild cases*, it will often cure gonorrhœa with great rapidity. This fact I think no one will deny. In some instances its action is so sudden that on the very next day only a slight gleet remains, which soon vanishes under the influence of any mild astringent. Even if it fail, it generally so alters the action of the parts that very simple means will remove the dregs of the disease; and, in point of fact, much greater progress toward a speedy and lasting cure is often effected by one injection, than by the most heroic employment of antiphlogistic medicines, rest, and low diet. But it does not always, or indeed often succeed when used alone, and then in bad cases the disease will go on, and stricture will set in, or some other complication will ensue, and the surgeon is blamed for using injections, "driving the disease in," and ruining the patient's constitution.

That its power, as a purely curative agent, when employed without the aid of other means is, in the general run of cases, very limited, I am quite satisfied. As an instance out of many others, I selected eighteen patients who were anxious to be cured at once, at all risks; they were in-

[1] Howard: Op. citat., vol. iii, p. 136.

jected with a solution of nitrate of silver, ten grains to an ounce ; a dose of calomel and opium, with a purgative draught was ordered, and the following results were obtained :

TABLE V.

Cases treated with Strong Injections of Nitrate of Silver.

Names.	Number of days the disease had lasted.	Symptoms and result.
J. B.	60	Pain, bloody urine, but improvement ; still some discharge.
J. N.	90	Pain and scalding lessened. Improvement ; still some discharge.
S. B.	270	Much pain and scalding ; little improvement.
H. H.	29	Some pain ; great improvement ; discharge lessened.
J. W.	17	Great pain ; discharge much lessened.
E. C.	35	So much pain caused that he refuses to have another injection. Discharge lessened.
J. B.	5	Great pain for four hours after ; no discharge to be seen ; cure.
G.	14	So much pain that he will not be injected again. The discharge is lessened.
E. G.	14	Great pain ; the discharge went away and then returned, but it is lessened.
B.	10	So much pain that he has no desire to have it repeated ; speedy cure.
W. N.	18	Great pain ; the discharge is gone.
E. E.	23	Discharge almost gone ; irritability of the urethra greater ; rapid cure.
H. H.	60	Not much pain ; the discharge lessened.
H. C.	130	Pain for three hours ; the scalding increased ; discharge lessened.
R. T.	21	The pain trifling ; pain and uneasiness in the penis and scrotum relieved ; the discharge almost immediately lessened.
J. R.	5	Great pain ; the discharge was stopped, and then slowly returned.
J. T.	2	Lost sight of.
W. H.	42	Lost sight of.

Here, then, we see that out of the eighteen two were immediately cured, and in nine others there was a considerable improvement ; some of them, indeed, were quickly freed from their malady, though they had long suffered under it. Of the remaining seven, two disappeared without giving notice, and the residue were not cured for a long time.

Subsequent experience has only tended to corroborate the conclusions then arrived at. Over and over again patients have applied to me with the request that I would cure them with a strong injection and without medicines, but the result has generally been that I was obliged to resort to the use of the latter, and that the injection failed. Many facts corroborating this statement have been communicated to me ; from among them I select the following. A physician told me that he had, in his own case, when a student, attempted to cut short a gonorrhœa by means of a strong injection of nitrate of silver. He did not know the exact strength of the solution, but it was at least fifteen or twenty grains to the ounce and might have been more. Pain of the most violent kind was at once set up. Two or three days after he noticed a dark substance, like a slough, protruding from the urethra. Taking hold of this he gradually drew it out. So great was its length that it seemed to be almost endless, and he assured me that it proved to be five inches long (!) yet the gonorrhœa went on utterly uninfluenced by the violent action which had been set up in the urethra.[1]

The late Mr. Acton's experience was certainly very different. He generally found two strong injections of nitrate of silver quite sufficient. He seldom had recourse to a third, and his patient was "quit of a troublesome complaint in a very few days."[2] M. Diday, who employs strong injections, speaks[3] quite confidently of curing the disease at a single sitting with an injection ("d'un seul coup de piston" . . . "en une séance"). His one injection, however, really means two, or what he calls[4] a "séance d'injections," one being required to clear the way for the other. The curative injection is a solution of the nitrate, not quite ten grains to an ounce (three decigrammes of the nitrate to eighteen grammes) of distilled water. He injects about a drachm of this, keeps it for about a minute in the urethra, and all is finished. Of course this applies to cases seen at an early stage ; but still, as I understand M. Diday, when the disease is unmistakably there. His later experience, however, seems to be rather different.

According to what seems a very trustworthy report[5] of twenty cases treated in Edinburgh Castle by Messrs. Johnson and Bartlett with injections of nitrate of silver, twenty grains to an ounce, the results were as follows : One case was discharged cured in three days, one in five days, one in six, two in ten, four in fifteen, four in seventeen, four in twenty, one in twenty-five, one in twenty-eight, and one in forty-two, the average

[1] Zeissl relates a case far surpassing this. He saw the whole mucous membrane of the urethra (!) cast off, under violent bleeding, like a sheath (wie ein Schlauch), from a young physician having imprudently thrown in a strong solution of caustic. Wiener medizinische Wochenschrift, S. 100. 1879.

[2] Op. citat., p. 90. [3] Exposition critique, p. 88. [4] Op. citat., p. 91.

[5] Edinburgh Medical and Surgical Journal, p. 263. 1818.

time for a cure being seventeen days and a tenth. These statistics do not differ so widely from those which I obtained, though they are in utter conflict with what M. Diday and Mr. Acton tell us.

Chloride of zinc, first proposed, I believe, as an injection by M. Gaudriot,[1] was at one time strongly recommended by the late Mr. Lloyd, of St. Bartholomew's Hospital. It is not often that there happens such a success with any novelty in the therapeutics of gonorrhœa as occurred in this instance. According, however, to a pretty general rule, the performance, when the remedy came to be fairly tested, proved to be so much below the expectations raised, that the choride fell into very unmerited disrepute.

During the winter preceding the appearance of Mr. Lloyd's lecture recommending the chloride, I had been engaged for several hours nearly every day in examining the value of certain substances as injections. Among these was the salt in question. As, however, my observations ran quite counter to those of Mr. Lloyd, I never had the least idea of claiming any priority ; in fact, I could not claim it, because I never discovered such valuable properties in this salt as he did.

The patients on whom the chloride was used were seen daily, Sunday excepted. They were injected at each visit with a solution varying in strength from one to ten grains in an ounce of distilled water, and every effort was made so to regulate the strength of the injection as to avoid giving anything like severe pain, while a decided, though slight sensation, lasting from a quarter to half an hour, was aimed at. The patients were instructed in the use of the syringe, and furnished with a weak solution of the same salt to use at home. The disease was at the same time combated with aperients, salines, and in some cases copaiba and turpentine, and the patients were diligently questioned as to every indulgence in diet, drink, and sexual intercourse.

Notwithstanding all this care, more pain was caused than with nitrate of silver or sulphate of zinc, while the disease did not disappear more quickly. In some cases it proved ineffectual, and had to be superseded by nitrate of silver or blistering ; in two stricture sprang up, and some patients left dissatisfied, so that I was induced to give it up ; in one or two instances only was it of benefit when the nitrate of silver failed. I tried weaker solutions, commencing with a quarter of a grain to an ounce, but after two years' careful examination I was compelled to return to the conclusions previously arrived at, namely, that, *cæteris paribus*, the chloride is equal but not superior to the acetate and sulphate ; and I may mention that I have seen so many cases in which stricture followed, either from the chloride possessing no proper control over the disease, or from its really adding to the existing irritation, that I think its action ought to be carefully watched.

[1] Journal des Connaissances médicales, Septembre, 1840.

When used of the proper strength—that is, so strong as only to produce transient pain, no one of the salts of zinc appears to me to possess greater curative power than another, but in respect to the amount of suffering they may entail, when used too strong, they differ more widely; for while the sulphate produces a sharp fleeting pain, seldom difficult to endure, that from the use of the acetate is more severe, and I have seen absolute torture arise from the employment of the chloride, even in a solution of moderate strength. One patient said that, "if it were not considered a liberty, he would beg to draw my attention to the close resemblance between the sensation induced, and that which he should fancy would be brought on by passing a red-hot knitting-needle along the urethra!"

Hence I am inclined, in cases where there is much pain, to prefer the sulphate; if very little pain be present, the chloride may be prescribed. As to the sulphate of alum, the sulphate of copper, and one or two other substances of the kind, on which I foolishly wasted my time and that of the patients, I am disposed to consider them as of very inferior value. A tabular view of the results of injection of several substances is given from Mr. Judd's excellent treatise at page 118, and the reader can compare it, if he likes, with what I have stated.

I have been so often questioned, both by surgeons and patients, as to how injections act, that I seize this opportunity of publicly avowing my total ignorance of the subject. My readers will be good enough to bear in mind that no instrument as yet contrived, even one so valuable and elaborate as the endoscope, enables us to examine more than a portion of the urethra, and that only for a very short space of time. Next, I suppose, it will be admitted, that to observe with precision what is being done in such a matter, the surface operated on must be seen. In that case, a man must be able *to look bodily down the urethra for hours, or right through its walls.* Farther, it would be necessary for the eye of the observer to possess a special magnifying power of from 225 to 450 diameters; otherwise all that could be seen would probably be a certain amount of punctate redness of the urethra, the formation of a filmy coat of white deposit (supposing the nitrate were used), followed by increased redness and then a somewhat paler hue than before. When, therefore, I find a writer attempting to explain the action of these fluids by the hypothesis that, "by arresting the discharge they relieve the urethra from the stimulus of the virus,"[1] or that they "close up the orifice of the ducts" (what ducts?), or that they "dry up the discharge without curing the inflammation," when the discharge arises solely from the inflammation, I really cannot help thinking that such statements do not tend to raise the character of medicine among sensible men. If I were pressed to give an opinion on the matter, I should feel tempted to say, that *I do not believe any person knows how injections act,*

[1] Babington: Works of John Hunter, vol. ii., p. 208.

and that, in the present state of medicine, any explanation must simply mean theory founded on personal conviction.

I think it just possible that the *modus operandi* is as follows: The secretion of pus is equivalent to exalted action in the mucous membrane of the urethra, which means that there is an accumulation of vital force at the part, for there could be no secretion without motion, and without force being applied there could be no motion. Now it seems pretty clear that, while a part will go on with a certain amount of morbid action for a time, the application of certain agents to this part being superadded, so as to produce a sudden increase of this morbid action, a rebound takes place; and, as the action of the agent subsides, the part is found less capable of continuing the morbid action for the time, or, in other words, there is less accumulation of vital power in it. I have repeatedly traced this form of action, for instance, in the application of a blister or galvanism to a sluggish ulcer; the influence of erysipelas on the same disease, and on lupus; the operation of a blister in gleet, and in some obstinate forms of tinea; where the morbid action is first increased and subsequently diminished by one and the same agent; and in a series of lectures, published under the title of "The Laws of Life," I have gone pretty fully into the question. But any lengthened digressions on such a subject would be quite out of place in a work like this, and I therefore gladly revert to the more practical part of the subject, and give in a tabulated form the results of my trials with the chloride.

TABLE VI.

Cases treated with Injections of Chloride of Zinc.

Name.	Days previously ill.	Character of the disease.	Strength of injection.	Treatment.	Results.
J. A.	42	Mild.	gr. v. to ℥ j.	Pil. tereb. c. strych.	At the end of 15 days little improvement
G. S.	3	Thick pus, severe.	gr. ijss.	Salines.	Swelled testicle. In 21 days discharge gone.
A.	Not marked.	Severe.	Ditto.	Acet. pot.	No improvement on 25th day. Treated then with purgatives and nitrates. Cured in about 52 days after.
C. L.	1	Ditto.	gr. ijss. to iv.	Nit. pot. c. p. ipec. co.; salines and aperients.	No improvement at the end of 27 days. Left.
C. C.	21	Ordinary.	gr. jss. ad ijss.	Pulv. salin.; mist. acid benz.	The plumb. acet. was used for 12 days, and then the chl. zinc, which almost cured him in 2 days. Left not quite well.

Name.	Days previously ill.	Character of the disease.	Strength of injection.	Treatment.	Results.
J. S.	11	Severe.	gr. ijss. and ij.	Pot. nit. c. pulv. ant.; pulv. salin., etc.	Severe pain; discharge disappeared in 2 days, but returned. On the 31st day still a little gleet.
C. L.	12	Ordinary.	gr. iij. and ij.	Pot. nit. c. pulv. ipecac. c.	Gave him so much pain he would allow it no longer.
A. S.	21	Ditto, first clap.	gr. ijss. ad x.	Sulph. magnes., pulv. sod. c. opio pulv. salin.	In 8 days there was only a little moisture, and this remained 10 days after, when he left me. Gr. x. gave only slight pain.
C. G.	4	Severe, second clap.	gr. j.	Pulv. salin., pot. nit. c. pulv. ipec. c.	In 8 days discharge had diminished, but swelled testicle came on, and he left me.
D. M.	3 to 4 months.	Ordinary.	gr. vijss. to ij.	Pulv. salin.	Discharge disappeared in 11 days.
J. M.	6	Ditto.	gr. ij. ad iv. and then to vijss.	Ditto, pot. nit., mist. salin.	At end of 37 days discharge still thick, purulent, and greenish.
T. R.	4 or 5	Ditto.	gr. j. to iij.	Salines, pulv. salin., mist. cop. c. tereb.	Caustic pastilles had to be resorted to on the 15th day; the cure was somewhat prolonged by his absence for a day or two. Cure in 62 days.
R. L.	Not known.	Very mild.	gr. ij.	Mist. acid benz.	Left the next day.
S. L.	Ditto.	Mild.	gr. iij. to vijss.	Ditto, pulv. salin., bark and acid.	Discharge disappeared in 6 days. But a slight gleet came back and lasted 30 days.
W. H.	21	Very severe.	....	Ditto, ditto, pot. nit.	On the 40th day the discharge was still bad. He then left.
G. C.	10	Ordinary.	gr. j. to v.	Pulv. salin.	Disappeared in 8 days.
T. J.	49	Very mild.	gr. j.	Sod. phos., sod. sulph., and mist. acid benz.	The discharge was nearly gone by the 9th day, when he left.
R. A.	Not marked.	Severe.	gr. jss. to v.	Pulv. salin., mist. pot. chlor., tincture of steel, pot. acet.	On the 20th day he left as bad as ever.
C. H.	A few days.	Ditto.	gr. j. to ij.	M. acid benz., pot. nit. c. pulv. ant. pulv. salin.	38th day no better. This case was followed by stricture.
W. T.	8 months.	Ditto.	gr. j. to v.	Pulv. salin, etc.	Stricture detected on the 75th day.
R. S.	3 months.	Ordinary.	gr. j.	Pulv. salin., bitters and acid.	The discharge gone in 10 days; a little gleet from time to time.
T. S.	Not marked.	Ditto.	gr. v.	Mist. pot. ac. c. rheo.	Left next day.

In conclusion, I may say that I think very favorably of both the chloride and sulphate of zinc, employed as adjuncts to other treatment. The mode of thus using them will be examined farther on.

The reader can now compare the average results of treatment, as put down in those tables, with those in a series of cases extracted from Ricord's "Traité Pratique," and from Mr. Judd's work.[1] The first column of the three in Table VII., compiled from cases in the "Traité Pratique," A, marks the number of days between the date of infection and the entry of the patient into the hospital. The second column, B, means the number of days the patient stayed in the hospital under treatment. The third column, C, contains the principal remedies used.

TABLE VII.

Cases treated by Ricord.

A.	B.	C.	A.	B.	C.
—	20	Injections and cubebs.	15	25	Inject. arg. nit.
30	27	Copaiba.	30	20	Inject. arg. nit. copaiba.
15	20	Copaiba.	6[2]	20	Ditto.
Old	10	Injections of alum.	21	20	Inject. zinc sulph.
Gleet	33	Inject. argent. nit.	8	20	Cubebs and inject. arg. nit.
8	20	Inject. argent. nit.			
—	32	Ditto and copaiba.	—	35	Inject.
30	35	Inject. zinc. sal. and cubebs.	63	30	Cauteriz. and cubebs.
			60	34	Inj. plum. diac. and copaiba.
8	31	Cubebs, steel.			
10	41	Cubebs and injections.	11	17	Copaiba and cauteriz.
4	21	Inject. arg. nit. and copaiba.	5	28	Argent. nit. and copaiba.
21	13	Cubebs and inj. arg. nit.	4	22	Ditto.
8	37	Cauteriz. and copaiba.	—	14	Cauteriz.
17	35	Cauteriz. inj. cubebs.	12	22	Inject. and copaiba.
—	29	Cauteriz. cubebs.	8	22	Inject. arg. nit.
—	41	Inject. plumb. diac. copaiba.	42	21	Inject. zinc sulph. and copaiba.

[1] Op. citat., p. 16.

[2] Months.

TABLE VIII.

Cases treated by Judd, showing the duration of Treatment under various kinds of Injections.

Names.	Substances used.	No. of days.
S——s.....	Sol. liq. plumb. and ext. belladonnæ.	2
G——e	" " " " "	5
G——t	" " " " "	3
S——d	" " " " "	5
G——t	Tinct. ferri c. aquâ.	5
C——s.....	" " "	4
H——s	" " "	7
W——l	" " " cubebs and copaiba.	6
McD——d ..	Sol. arg. nit.	5
T——r	" " copaiba.	7
B——t.....	Ext. cubeb.	3
R——e	Inj. zinc. sulph., bals. cop.	By twice using injection, in one evening.
K——e	Inj. zinc. sulph., bals. cop.	1

The average time for cure is much below anything I have seen.

Nitrate of Silver Pastilles (Soluble Bougies).—In the first edition of this work, published in 1852, are some briefly detailed notices of attempts to cure obstinate gonorrhœa with pastilles. The marked effect produced by frequently repeating injections led me to hope that, if the action of such a salt as the nitrate of silver could be kept up for some hours, a more speedy cure might be obtained. For this purpose pastilles or small bougies, containing sometimes a grain, sometimes half a grain, of the nitrate, mixed with powdered gum arabic, were made into a paste, and after being shaped like a small bougie, an inch and a half to two inches long, were, while still soft, oiled and introduced into the urethra. In the course of from two to five hours they dissolved, but instead of effecting any improvement, they either produced no change at all, or else brought on an aphthous state of the mucous membrane, such as is often seen after strong injections of nitrate of silver have been used, and equally difficult to remove. In some instances they occasioned such discomfort, that the patients were glad to remove them, or to expel them by making water.

Four years after the appearance of the second edition, and fourteen after that of the first edition, of this work, mention was made in the *Mirror of the Practice of Medicine and Surgery*[1] of the use of soluble bougies in the practice of Sir Henry Thompson, who was trying them in the treat-

[1] Lancet, vol. i., p. 513. 1866.

ment of gonorrhœa at University College Hospital, and who had himself long previously informed me that he had read the first edition of this work, where he must have seen the reasons assigned for the experiment. Some short time after, Mr. Henry Smith stated [1] in the same journal that two months previously Mr. Cooper, of Oxford Street, had suggested to him the idea of employing the substances used for injections in gonorrhœa in the form of bougies of cacao butter; and again, subsequently to this, a letter appeared [2] from Mr. Edgar Browne, of Liverpool, saying that he had used such bougies before either Mr. Smith or Sir Henry Thompson, and that he was led to do so from observing the beneficial effects of bougies smeared with lard ointment or medicated glycerine. Sir Henry Thompson pointed out, in reply to Mr. Browne, that medicated bougies made of wax, in which some active chemical agent had been dissolved, were used even before the time of Wiseman. From this time forth, a passing extract from some foreign periodical excepted, the subject disappears from the English journals. The idea was, however, as we shall see directly, eagerly caught up in Germany.

The material used for the bulk of the bougie was, in Sir Henry Thompson's experiments, cacao butter, which, as it melts at a temperature of 100° Fahrenheit, is perhaps the best that could have been selected. The other ingredients experimented with were, for each bougie, a quarter of a grain of nitrate of silver, a grain of tannin, two-thirds of a grain of acetate of lead or ten grains of nitrate of bismuth as astringents, and two grains of belladonna or opium as a sedative. The walls of the urethra were pressed against the bougie by means of a pad of Taylor's stout lint and a slip of adhesive plaster, with the view of squeezing the melted bougie into the lacunæ of the urethra. Judging from the recorded effects, I am of opinion that the pastilles are cleanlier, and that neither can be considered very efficacious.

Mr. Watson Cheyne, considering that the lingering of organisms in the urethra may satisfactorily account for the continuing of the disease, has tried [3] the effect of destroying these by means of antiseptic soluble bougies, containing five to ten grains of iodoform and ten grains of eucalyptus oil, followed by injections of boracic acid or eucalyptus emulsion, and with the same unvarying good fortune which seems to wait on all essays of this nature. In four or five days the discharge becomes mucous, and ceases altogether in a week or ten days; there being, I presume, neither failures, complications, nor after-results; while Mr. Brindley James [4] seems to have been a trifle more successful than even Mr. Cheyne, his patients getting well in about a week. Yet, gratifying as such success may be, we must, when we remember that Dr. Morris cured two-and-

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[1] Lancet, vol. i., p. 674, 1866.
[2] Ibid., p. 724.
[3] British Medical Journal, vol. ii., p. 124. 1880.
[4] Ibid., p. 166.

twenty cases at a single sitting, decide that we have arrived at finality, and that any further essays with soluble bougies are a meaningless waste of human time and talent.

3. *Glycero-Tannin Rods.*—Professor Sigmund tried the bougies in four cases, but with unfavorable results.[1] Dr. Schuster also made some attempts with them,[2] but found that the plaster by which they are kept in is troublesome to apply, while, if it slip off, the cacao butter dirties the patient's linen in a very unpleasant way. He therefore substituted glycero-tannin rods, three to four inches long, which could be pushed right down the urethra. These rods are well rounded at the end, and each one contains two grammes of tannic acid, twelve centigrammes of opium, and sufficient glycerine to make these ingredients up into a proper consistence. They are prepared for use by dipping in hot water, and are only kept in the urethra five to ten minutes. These rods seem to have acted very well in Dr. Schuster's practice, curing the cases quickly, and not bringing on either orchitis, inflammation of the neck of the bladder, of the bladder, or prostate.

Tomowitz, however, who tried the rods in fifty cases,[3] did not find them so easy to introduce as the readers of Dr. Schuster's paper might imagine, or more efficacious in acute gonorrhœa than ordinary treatment, but more useful than the latter in cases of gleet; and Dr. Adolf Stern, who gave Schuster's plan a fair trial in a large number of cases,[4] never in a single instance, where he watched the patient closely, achieved the cure of acute gonorrhœa in less than four weeks. Often the time required was from five to eight weeks, so that in respect to shortness of duration he did not find it in any way superior to injections. He had no better success with the rods in gleet, and never once noticed any of the wonderfully rapid cures related by Dr. Schuster. He found that the rods, though easy enough to introduce, were difficult to make, and left stains on the linen which could not be effaced. He very properly condemns Dr. Schuster's proposal to use them twice a day as impracticable, but agrees with him in observing that their employment is not followed by orchitis, the only point on which the two observers are in accord with each other.

Dr. Oidtmann, of Linnich, has tried a very similar mode of practice,[5] or rather one which might be described as more akin to the armed bougie, using bougies smeared with a compound of Goulard water, lunar caustic and spermaceti ointment, and afterward dipped in a mixture of cod-liver oil and glycerine, the paste thus formed being left in the urethra. Dr.

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[1] Der practische Arzt. Quoted in Practitioner, vol. i., p. 373. 1869.

[2] Archiv für Dermatologie, B. ii., S. 176.

[3] Allgem. milit. ärztl. Zeit., No. 46. 1870. Quoted in Archiv für Dermatologie, B. iii., S. 41.

[4] Archiv für Dermatologie, B. v. S., 502.

[5] Der practische Arzt., 9. 1868. Quoted in the Practitioner, 384. 1868.

Oidtmann speaks of this method as curing rapidly and without pain. The injection of starch and glycerine, mixed to a creamy consistence, recommended by M. Paillasson, may rank in the same category. Of both plans, however, I find no later notice. The reporter of the *London Medical Record*, commenting [1] upon an account by Dr. Lorey of the cure of twenty successive cases by means of gelatine and gum bougies containing some therapeutic ingredient, probably sulphate of zinc, says that an extensive trial of them at the Lock Hospital showed that, though occasionally useful in gleet, they are more uncertain than injections, and sometimes cause great irritation. In two cases swelled testicle came on, and in several the discharge, which had stopped under their use, returned as soon as they were left off.

And now, in order to bring into as narrow a focus as possible the arguments for and against all the systems of treatment as yet discussed, I shall try if I can reduce them to a few aphorisms, in which, indeed, if I could, I would have written the whole work; for I imagine that men like, above all things, not only to see at a glance what an author has borrowed and what he has found out for himself, but to find his meaning tersely and clearly expressed; and in no way can this process be made so easy as by condensing his views into these compact forms of speech which, "except they should be ridiculous, cannot be made but of the pith and heart of sciences." The conclusions, then, which I venture to draw, are—

1. That all the remedies yet enumerated, though adequate to cure by far the greater number of cases, still leave many unrelieved.

2. That while many are undoubtedly valuable, some of them are disagreeable, some dangerous, and some superfluous.

3. That there are no rules to guide us in distinguishing, at the outset, those cases which are, from those which are not, amenable to these remedies.

4. That where so large a list of remedies is given, some attempt ought to be made to decide with accuracy in what cases each remedy should be tried; which as yet has not been done, so that every cure obtained is only an additional source of confusion.

5. That the reputation of injections has been injured by the want of any certain rules as to the relative value of the different substances employed, and the strength requisite in different cases; thus leading to the indiscriminate application of different substances in solutions of the same strength on the one hand, and on the other, to the equally indiscriminate application of injections of the same strength to cases not equally fitted to bear them.

6. That the treatment has been made secondary to disputes about the nature, sources, and history of this disease, and to speculations, for they

[1] 1873, p. 362.

deserve no better title, about the action of medicines; whereas the cure of disease ought to precede all other considerations; for however great may be the value of science, the welfare of man is a still greater object.

7. That rash as such an opinion may seem, I do not fear to say, *that I doubt whether man will ever discover drugs superior in their power over this disease to those we already possess,* and that there is accordingly more to be hoped for by trying to improve the administration of medicines already known to us, than in seeking for new remedies.

I have spoken plainly on this topic. The trite generalities, the incessant repetitions, the falling back upon authorities and general principles, practised by some authors, may be very orthodox; but they do not satisfy our mental cravings, they do not give us what we want. Writers now and then express themselves so very guardedly, that it is as difficult to arrive at a certain knowledge of what their opinions really are as it is to make out those of a Greek chorus.

Proposed Plan of Treatment. A. *In the Male.*—After this preliminary discussion the reader will naturally inquire whether I have anything better to offer in its stead. I reply that I must leave that point to his decision. In the meanwhile I beg to submit for examination, first of all, a plan of *abortive treatment,* and to demonstrate the results it seems to offer. To do this properly I must first ask permission to divide all cases of gonorrhœa into two classes, viz., those which admit, and those which do not admit, of such a plan.

Abortive Treatment.—Those, then, which seem most adapted for it are—

1. Cases where the patients present themselves before great pain and running have set in.

2. Patients who have had gonorrhœa previously, and in whom the present attack does not appear to be very severe.

3. Those cases where the patient is desirous of an immediate cure at any price, and would rather go through anything for a day or two than have a long illness.

And before going into the details I must digress for a few minutes to combat an opinion which seems very prevalent, and which is, that M. Ricord is constantly in the habit of using an abortive treatment of a similar kind; or, in other words, of preluding all measures with a strong injection of nitrate of silver. This may be an incorrect assumption, as I have no written authority for it, but I know I have repeatedly heard it stated, both in private and public, without contradiction. Now nothing could be wider of the mark. M. Ricord's abortive treatment, as laid down in his *Traité Pratique,*[1] consists of rest, low diet, and, where there is pain, thirty or forty leeches to the perineum, followed by copaiba or cubebs and *mild* injections of nitrate of silver; and he expressly confines his recom-

[1] P. 707.

mendation of a strong solution of this salt to those cases which begin "without pain, without any sign of inflammation." By means of leeches used in this way, and cubebs, he sometimes cures the disease in three or four days, and generally in fifteen to twenty. When the disease begins without pain he gives drastic purgatives, sometimes with astringent injections. To the best of my knowledge it was Debeney and the Irish surgeons mentioned by Carmichael [1] who first introduced the practice of trying to cut short gonorrhœa by giving a strong injection of nitrate of silver.

Before taking a single step it is indispensably necessary to ascertain whether the patient can rest for the entire day after, and if not whether he is disposed to suffer considerable inconvenience. If he be unable or unwilling to do either, it is best at once to lay aside all thoughts of an abortive cure and refer the case to the second class.

But if this co-operation on his part can be obtained, the abortive treatment may at once be commenced. The patient should make water, and the surgeon then injects him with a solution of nitrate of silver containing five grains to an ounce of distilled water. The syringe used should be that spoken of in the section on syringes. By limiting the strength of the solution to five grains we avoid the severe pain which is caused by the strong solutions of this salt, and by retaining the injection in the urethra for two or perhaps three minutes we can, in almost every case, attain any useful purpose likely to be served by a more concentrated solution. M. Diday advises [2] that the injection should be kept in for five minutes.

The deep burning pain which now ensues is widely different from that produced by the salts of zinc, and is often accompanied by flushes of heat which thrill through the frame. It is, however, generally soon relieved by bathing the penis with hot water, and a hot bath will for the most part effectually remove what the local application has left undone.

The next step is to prescribe a dose of calomel, at least three or four grains, followed by seidlitz powders, citrate of magnesia, or draughts of salts and senna every two hours until several loose stools are procured. The bowels should be completely scoured out, and no food allowed except a little warm tea or gruel, with toast, to assist the action of the medicines. The citrate of magnesia is unquestionably the most agreeable, and I fancy it is quite as efficacious as the others.

After every stool the patient should inject with a solution of sulphate of zinc from three to five grains in the ounce. The injection is to be kept in contact with the mucous membrane till a slight sense of burning is induced, when it may at once be withdrawn. The penis should be bathed each time

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[1] An essay on Venereal Disease. By Richard Carmichael, M.R.I.A. P. 111. They used an injection of ten or twelve grains to an ounce; Carmichael, himself, however, strongly deprecates the practices.

[2] Thérapeutique des Maladies Vénériennes, p. 9. 1876.

with water as hot as it can be borne; and the greater the heat the more complete the relief, not only to the pain produced by injecting, but also to the scalding, weight, etc.

Dr. Niddrie advises[1] injecting in much the same way twice every half hour, employing, the first day, cold water, and the second sulphate of zinc solution, and seems to have had great success. Dr. William Colles injects every half hour,[2] as does Mr. Berkeley Hill, using, however, tepid water, and when the congestion is moderate and the irritation not too great, hourly injections of alum or zinc. I have never carried the system quite so far as this, but I have repeatedly known patients give themselves six or seven injections in a day with good results.

The next day the discharge is generally thin and small in quantity, the symptoms of inflammation have disappeared, and the cure is mostly completed in a day or two by the use of the same means; the patient using the injection every time he makes water, and gradually raising the strength of it till it reaches ten grains to an ounce. Mild aperients and low diet may also be continued. When this plan fails, the case may be referred to the second class, for I believe that abortive treatment, to succeed at all must succeed at once.

The reader must, however, bear in mind that, as I have already said, and as I stated in the first edition of this work, but few cases comparatively admit of this treatment. I believe those who have tried it and have looked into the results are agreed on this point. Dr. Bumstead says,[3] "Taking the usual run of cases as met with in practice, probably not one out of ten is seen at a sufficiently early period to admit of the abortive treatment;" and Dr. Durkee considers[4] that the number of cases in which it can be employed must necessarily be very small, and that if the discharge have lasted more than a day and a night the time for making trial of it has passed.

Ordinary Treatment.—Every other case of gonorrhœa, every case in which the abortive treatment has failed, or in which it cannot be applied, and every case accompanied by excessive pain and irritability of the urethra, or of long standing, and attended by fixed pain on the under surface of this canal, may be placed in the second class. It is to these that I wish to apply a new treatment, substituting for the means usually employed certain salts of potass with aperients and injections so combined, graduated, and applied, as to act efficiently but without much pain, *over the whole of the diseased surface.*

After a great number of experiments I am disposed to think that in all but very severe cases the acetate of potass, in combination with spirit of nitric ether, is one of the most potent internal remedies I have met with.

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[1] Lancet, vol. i., p. 357. 1852.
[2] Dublin Quarterly Journal, vol. xxxv., p. 2.
[3] Op. citat., p. 78.
[4] Op. citat., p. 34.

The best proportions seem to be five drachms of acetate of potass with three drachms of spirit of nitre, and half an ounce of compound spirit of juniper, or two or three drachms of spirit of nutmeg, in a six-ounce mixture, employing as a vehicle almost anything the patient likes, camphor mixture and mint-water being perhaps among the best. In more severe cases the chlorate of potash may be added, and in those of unusual severity I should recommend beginning with it at once. As many failures attended my first attempts to discover an available form of prescription, I give one which I believe to be the most useful.[1]

Along with these medicines I would always recommend a free use of the pills given below,[2] when the bowels are only acted upon with difficulty. They should, I think, always be given to such an extent as to induce two or three loose stools daily. When they do not act freely enough, a teaspoonful or two of citrate of magnesia, a seidlitz powder, a tablespoonful of any saline mixture, or a wineglassful of Friederichshall water, may be given the following morning.

When one of these solutions is taken regularly, supposing it is suited to the case, an alteration in the discharge is soon noticed, indeed within forty-eight hours it is materially diminished, becoming at the same time thinner, less colored, and more mucous. This effect seems to be produced with equal rapidity in cases of long standing and recent ones, in women and in men; potass being perhaps one of the true antiphlogistics in inflammations of this kind. So far as I know, every surgeon who has given these medicines a fair trial has admitted their power.[3] Their use has been attended with much less chordee, and has not been followed by irritable bladder or swelled testicle in more than a few instances out of all the cases I have treated for many years, whereas, under the old plans, these annoying complications were very frequent. Generally, too, the weight felt about the testes, the scalding and pain on making water, quickly grow milder under their influence.

It is scarcely ever requisite to continue the potass mixture more than ten days, and I seldom keep it up beyond a week; what good it can do it usually effects in that time, and generally by then the symptoms are so far subdued, that it is difficult to persuade the patient to go on with treatment at all. Indeed, speaking at hazard it may be assumed that at this time three patients out of four bring on a relapse by some imprudence; however, it is seldom necessary to do more than to resume the old treatment, the potass mixture being now given for only three or four days. At the same time the

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[1] ℞. Potassæ chloratis, ʒ ij.; aquæ destill. bull., ℥ iv. M. et agita bene donec solutio ft. dein adde potassæ acetatis, ʒ ij.; spir. juniper., ℥ ss.; mist. camph. ad., ℥ vj. M. Coch. amp. duo bis quotidie sumenda.

[2] ℞. Pil. colocynth. comp., ʒ ss.; — hydrargyri, ☉ss.; ext. hyoscyami, ☉j. M. ft. pil. xij. Sumat j. vel ij. horâ decubitura.

[3] Langston Parker's Modern Treatment of Syphilis, p. 67. 1860.

patient may as well be warned that the relapse is generally more difficult to manage than the original disease. From giving any specific medicines after these potass preparations I have never seen the least benefit, but the patient gets on the better for having recourse to the aperient pill, supplemented occasionally by a mild dose of some saline aperient before breakfast. When he is weak and low, there is no harm in his taking a little acid and bitter, quinine, or forty to sixty minims two or three times a day of Thomas's tincture of the sesquichloride of iron, it being, however, quite understood that such remedies possess no control over the purulent running.

These medicines I have now used for some years without seeing any case resist their influence, except—1, when there was stricture ; 2, a tight, irritable state of the urethra ; and 3, when the disease was of long standing and strong injections had been used, the patient all the while suffering from a fixed pain in the under part of the urethra, generally near the frœnum, but sometimes obscure as to its true seat. Even many of these cases were materially benefited, but it was necessary also to have recourse to further measures. It should, however, be thoroughly understood, that I do not speak of them as either infallible, or adequate of themselves to cure the disease.

So long as the heat in the penis and scalding trouble the patient, so long should he resort to the frequent use of hot water in the way mentioned in speaking of the abortive treatment.

In most cases this treatment will not succeed unless it be seconded by injections. In order to make the action of these as perfect as possible, care must be taken—To select a solution of such a strength as to act on the mucous membrane. 2. *To apply it over the whole of the diseased surface.* 3. To see that it is producing no injury.

Although I have such a very high opinion of the nitrate of silver, still I do not think it is a good plan to trust the patients with it, for they are apt, in their anxiety to hasten the cure, to make over-free use of the remedy, and induce a state of matters very difficult to set right again ; generally indicated by a sanious discharge, fixed pain in the under surface of the urethra, and sometimes even an aphthous state of the mucous membrane. Besides this, it stains the patient's hands and linen, the floor, carpet, etc. It requires a complete and rather expensive apparatus, so that, upon the whole, it is best for the surgeon to use it himself. The stains spoken of may be removed from colorless materials without any injury, but it is very difficult to efface them without discharging colors, especially delicate ones. The shortest way is simply to rub them over, after wetting them, with the cyanogen soap made by Mr. Thomas, of Pall Mall, or to apply a solution of cyanide of potassium.

The nitrate of silver should be used every day till the discharge has ceased ; for the plan to be pursued after this instructions are given. As regards the strength of the injection, the safest way is to begin with a so-

lution of an eighth to half a grain to an ounce, according as the patient is known, or seems, to be very sensitive as to pain or not, and raise it gradually to a strength of not less than two or more than ten grains to an ounce. I have sometimes met with a case where the patient could never bear more than a grain to the ounce, and yet did very well. There is one golden rule for deciding how much is to be done at a time. *A slight feeling of heat, for a quarter of an hour or twenty minutes after giving an injection, is all that is requisite.*

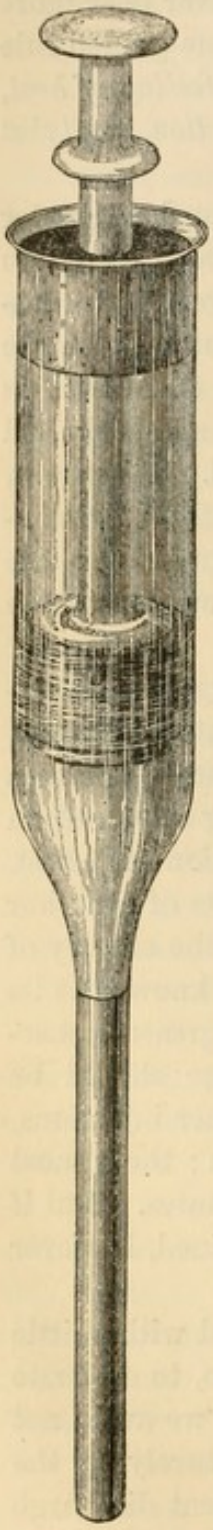
When this injection has, from some idiosyncrasy, produced a greater amount of pain than was expected; when the patient has been using too strong injections previous to his first visit; when there is reason to suspect that stricture is coming on; when there is an aphthous state of the urethra, or discharge of blood or bloody serum from this channel, it is better in all cases to suspend injections, or to use them very sparingly, till these symptoms subside, when they may safely be resumed. Whenever, too, it is observed that distending the urethra, however gently, by retaining the injection gives pain, this should be at once discontinued, and the fluid should be simply allowed to trickle from behind forward over the inflamed part.

In conjunction with the nitrate of silver, given by the surgeon, the sulphate of zinc, along with the chloride, may be used by the patient himself, commencing with one to two grains of the former, and a quarter to half a grain of the latter, in an ounce of water, gradually increasing the strength of the solution, so as just to keep up the same amount of action as at first, and no more. The addition of ten or fifteen minims of spirits of camphor to each ounce of the solution has often appeared to increase the efficacy of the injection. How it acts I will not venture to say; I only know that its operation is generally beneficial, which is to my thinking of greater consequence. When the chloride is prescribed, a little mucilage should be added, to prevent flocculence in the solution. As with the other injections, this should never be carried to the extent of inducing pain; the utmost that is required is a slight sense of heat for ten or fifteen minutes. But if it is to be of any service this degree of action must be attained, however strong a solution may be required.

The patient should always make water before injecting, and with a little perseverance he will generally be able, after an effort or two, to evacuate some fluid from the bladder. When this precaution is taken, we avoid not only the hazard of the injection being washed out prematurely by the stream of urine, but also of its being prevented by the purulent discharge from coming in contact with the mucous membrane. Besides, this practice conduces greatly to the patient's comfort, as the passing of the urine over a recently injected surface is often very disagreeable.

Many surgeons think it necessary to change one injection which is doing no good for another, on the chance that it may be of service, "ring-

ing the changes on them frequently," as one author puts it. Mr. Johnson[1] and Mr. Philip Foster[2] advocate this plan, as did Sir Astley Cooper,[3] and Mr. Noble Smith holds[4] that the great secret in using injections is to "vary them sufficiently;" Zeissl even maintains[5] that we ought never to use the same injection very long, as the urethra so soon gets accustomed to it. This may be good practice, but it does not tally with the result of my observations, which is, that if the injections just mentioned will not cure the disease, no remedy of this kind will; and that when one substance succeeds where others failed, it simply means, not that the change has done good, but that that remedy was, from the very beginning, better suited to the case. But supposing the opinion of these gentlemen to be well founded, what becomes of inductive science here, seeing that the practice is about as purely empirical as anything can well be?



Syringes.—However important it may be to regulate exactly the strength of an injection, it is equally indispensable that the fluid should come into contact with the *whole* of the diseased surface, and that a proper quantity should be injected. To effect this the syringe employed by the surgeon must be furnished with a pipe quite an inch and a half to two inches long, as shown in the engraving, which is the exact size of the instrument. I often use one more than three inches in length. This tube should be made, either of platinum, which is the best of all materials, or of silver drawn solid. If a soldered silver tube be substituted, it becomes in the long run nearly, if not quite as costly, as the soldering must be well gilded, and the gilding frequently renewed, otherwise the nitrate will soon act on it. *Unless this precaution, of fitting the syringe with a pipe, be taken, injections may be used* FOR MONTHS *without ever reaching the seat of the discharge.*

All the syringes I have seen are far too long in the barrel, and hence somewhat unmanageable. It is not every person that can stretch his hand so as to reach the knob, or ring, of the piston, and at the same time grasp the cylinder firmly. The consequence is that the instrument is awkwardly held, and perhaps dropped and broken; moreover, the piston often fits badly to the cylinder, so that a great deal of the fluid escapes backward; and if this be obviated, the patient injects far

[1] Op. citat., p. 96. [2] Medical Times and Gazette, vol. ii., p. 461. 1873.
[3] Lancet, vol. iii., p. 200. [4] Ibid., vol. i., p. 780. 1871.
[5] Wiener medizinische Wochenschrift, S. 999. 1879.

too great a quantity, thus causing unnecessary pain and distention of the canal, to which, perhaps, much of the mischief said to have been caused by injections might with reason be attributed.

In order to obviate these defects, I had some syringes made expressly for patients and of a totally different construction.[1] The cylinder and piston are not above half the ordinary length, so that a much greater control over the instrument is obtained. The cylinder, when the piston is in, contains about two drachms of fluid, so as to allow for loss and yet leave a sufficient quantity. The pipe is made of silver, two inches long, extremely smooth, and of the diameter of a No. 6 catheter. Britannia metal, or even ivory, will do very well when the syringe is only to be used for zinc injections. The cylinder should always be of glass, even where expense is not an object and more costly material might be considered an advantage, for the patient can then see that it is properly charged with fluid and not chiefly with air, as I have often known occur with pewter syringes; and in order that no fluid may escape backward, the piston should be overlaid with worsted or wash-leather, so that it only works stiffly at first.

With this syringe the patient can inject over the whole of the diseased surface. The penis is grasped at the glans, and drawn into a straight line, the syringe introduced, and the piston is then driven sharply home. As the fluid is forced into the urethra the syringe should be withdrawn, in order that no part of the canal may be immoderately distended; the glans should be kept firmly in contact with the pipe till it is withdrawn, and then compressed at the meatus, till the injection produces the desired effect of inducing a decided feeling of warmth. In some cases accompanied by a very unusual tenderness of the urethra, it is a good plan to dip the syringe in oil for the first day or two.

When, in earlier editions of this work, I insisted on the necessity for carrying the injection a good way down the urethra, I was met by very decidedly expressed objections. Since then the principle has been more than once recognized, for in 1867 we find Mr. Grinfield Coxwell recommending[2] syringes with tubes two and a half inches and six inches long, pierced at both points and sides, as highly useful in gonorrhœa and gleet; Dr. Morgan describing[3] a syringe composed of two tubes and a bottle, the far end of the tube leading to the bottle charged with the injection being taken by the patient between his teeth, so that the fluid may be blown a good way down the urethra; Mr. Durham using[4] an elastic ball with a vulcanite tube quite three or three and a-half inches long, and so on.

Dr. Bumstead recommends, that[5] while the injection is in the urethra,

[1] Made by Messrs. Walters & Co., of 29 Moorgate Street, and exhibited before the Medical Society of London, May 28, 1853.

[2] Medical Times and Gazette, vol. ii., p. 617. 1867.

[3] Dublin Quarterly Journal, vol. xlvii., p. 358.

[4] Guy's Hospital Reports, third series, vol. xv., p. 475. [5] Op. citat., p. 76.

"a finger of the disengaged hand should be run along the under surface of the penis from behind forwards, so as to distend the portion of the canal occupied by the injection and insure the thorough application of the fluid to the whole mucous surface."

It is all-important that the surgeon should satisfy himself whether the patient understands how to use the injection; no directions will ever take the place of this precaution, the want of which has thrown more discredit on injections than even such sequelæ as stricture and orchitis; I have constantly heard patients, especially hospital patients, say they knew how to inject themselves, and make a very lamentable exhibition when they came to show off their skill. The fluid slipped back between the piston and barrel, or flowed out of the urethra as fast as it flowed in, or never flowed in at all, etc.

I trust it is now needless to say that it is quite unnecessary to compress the urethra behind the scrotum in order to prevent the injection from passing too far into the canal. It is a mystery to me how such a fear as that an injection could get into the bladder, or if it got there could do the least harm, ever originated; and it is one of the proofs of the anxiety with which men of abilities and information cling to traditions and preconceived theories, which five minutes' use of their own senses would overthrow. Howard tells [1] his readers that the syringe should never have a long tube. Sir Charles Bell actually used leather shields to prevent more than the tip of the syringe entering the urethra;[2] and Sir Astley Cooper recommended a similar precaution, though neither he, strong as he was, nor any one else, could force an injection into the neck of the bladder with the common syringe. The difficulty is to get it in far enough.

A correspondent of the *Medical Circular*,[3] speaking of this paragraph, said that, with a common pewter syringe, he had passed an injection into the bladder more than a hundred times, and Dr. Otis has known three patients able to inject their own bladders with an ordinary syringe.[4] Since then the possibility of this occurrence has been strongly re-affirmed and as strongly contested. I certainly never tried to force fluid into this viscus, and therefore I ought not, perhaps, to have denied that others may have succeeded in doing so. I have, however, often seen patients employ a good deal of force, and yet fail, and I have used almost daily, for years past, a very long syringe, reaching to the membranous part of the urethra; but although the injections given with it are for maladies in which the urethra is much less irritable than in gonorrhœa, yet I generally find that every drop of the injection is expelled so soon as the pressure is taken off.

I have frequently seen a mild injection kept in the canal a minute or two, and then thrown out, sometimes suddenly, at other times slowly. At

[1] Op. citat., vol. iii., p. 138. [2] Institutes of Surgery, vol. i., p. 291.
[3] Vol. ii., p. 218. 1859.
[4] New York Journal of Medicine, vol. i., p. 360. 1870.

first I thought these were instances of injections reaching the bladder, but long ago arrived at the conviction that the occurrence is due to sudden contraction of a segment of the canal; for if an injection enter the bladder and be expelled, *the urine comes with it.* One gentleman, however, quite capable of judging, supports the position I have taken up. "It is," says Dr. Bumstead,[1] "absolutely impossible to inject the bladder, however great the amount of force employed, by means of a syringe merely introduced within the meatus;" and what holds good of injecting in this way is quite applicable when syringes with a tube two inches long are employed.

Dr. Bumstead speaks highly of the syringes made by the American Hard Rubber Company. In these instruments the diameter of the cylinder is in all parts alike, the piston fits with great accuracy, and the material employed is not acted on by any of the substances usually prescribed for injections. Vulcanite syringes have also been recommended.[2]

The surgeon should instruct the patient as to the best method of preventing the discharge from marking his linen. All oiled-silk bags, thick wrapping, etc., heat the penis too much and dispose to chordee. The simplest and lightest application I know of is the following: When the prepuce is short, a piece of thick lint, half an inch long and a third of an inch broad, or a layer of cotton wool, is placed over the orifice of the urethra; the end of a strip of bandage, a foot long and an inch broad, is then laid on the under surface of the penis, passed over the lint to the upper surface of the penis opposite to where it was first applied, turned on itself, and carried twice round. It may then be secured by a piece of worsted, or a very thin ring of galvanized india-rubber. An old towel or napkin affords excellent material for a bandage, and the lint should be changed every time the patient makes water. When the prepuce is long there is no need for any bandage; the skin is simply drawn back, the cotton or lint placed underneath it, and it is then drawn forward again. Should the discharge be very profuse, a good plan is to tie an old silk handkerchief round the waist and let it hang down in front.

The nitrate of silver injection is used regularly till the discharge ceases, and for three days after. From that time forth it is given only every second day, and can even usually be reduced in strength; for it may be laid down as an axiom, that the necessary effect should always be attained with the smallest amount of material. Generally, at the expiration of eight days from the last appearance of any morbid secretion, measures of this kind can be safely renounced. On the other hand, when the discharge is rebellious, and no particular pain is set up by the solution which the surgeon is using, this may be increased in strength. The rate at which this can be safely effected is scarcely ever alike in two persons, and much must therefore be left to the surgeon's discretion. I have found an eighth

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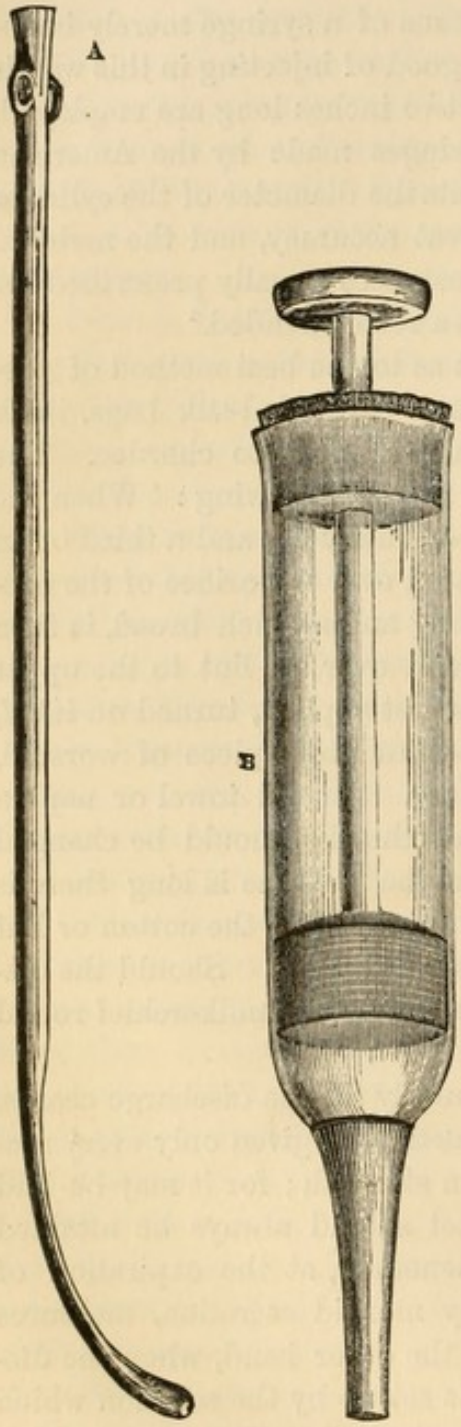
[1] Op. citat., p. 83. [2] British Medical Journal, vol. ii., p. 821. 1881.

of a grain enough, and I have, with the patient's full concurrence, raised it five grains at a time. The zinc injection is continued and left off along with the nitrate, but from the time that the discharge has stopped, it need not be employed more than twice a day.

I have never been quite able to satisfy myself as to the average time cases of gonorrhœa last when treated in this way. A great many get well in from four to fourteen days, but again I have seen a careful, attentive, healthy looking patient little if any better at the end of three to four weeks; and one gentleman, a native of Australia, had scarcely improved after sixty-five days of most persevering attendance.



The Long Urethral Syringe.—When the symptoms point to extension of the morbid process toward the membranous portion of the canal, recourse should be had without delay to an instrument which will carry the fluid as far along the urethra as the disease itself reaches, and this I conceive is thoroughly effected by the syringe shown in the annexed engraving.[1] It consists, as the reader will see, of a detached tube A, which is oiled at the tip and passed down as far as the bulb, membranous, or even the prostatic portion of the urethra, as may be found requisite; the syringe B, charged with a solution of nitrate of silver, is inserted into the end of the tube and pressed firmly in, so that the two parts may hold well together; the piston is then driven home, the tube being steadily withdrawn at the same time. The fluid should be detained in the passage by compressing the urethra rather low down in the penile part till a sensation of heat is felt, when it is allowed to escape. To prevent after-leakage from staining the linen, the same precautions should be taken as when injecting with the short syringe.

I have learned to thoroughly distrust everything but nitrate of silver

[1] In the engraving the syringe is drawn of the right size; the tube is reduced nearly one-half.

for this purpose. Whatever may be the merits of other injections, I have neither seen nor read anything to make me think that one of them surpasses the nitrate in curative power. The strength of the solution must depend upon the sensitiveness of the urethra. When this is very marked, a sixteenth to a twelfth or an eighth of the nitrate to an ounce of distilled water will be quite enough to begin with, as the reader must bear in mind that the solution has to be applied over a much larger surface than with the short syringe. There is one safe rule to guide the practitioner: he had much better use too weak an injection at first than err in the opposite direction, as it is always easy to make up for lost time. Much pain should on no account be caused; even when the patient is quite indifferent about such a result it is a gratuitous evil here; for injections of such a strength as to cause great suffering do not cure the disease any quicker than mild ones, and they often make the urethra so tender and sore, that the patient cannot go on with them at the very time when it is most requisite that he should continue the treatment. Mr. Teevan asserts that they will bring on stricture, even when the patient has never had gonorrhœa or gleet, but this does not accord with my experience.

As to the quantity, I never charge the syringe with more than a drachm and a half to two drachms of the fluid, and of this quite two-thirds remain in the tube. Generally it is not requisite to inject more than every second day, and on no account more than once daily. So soon as a beginning is made with this instrument the zinc injection should be used only in great moderation, and very often it may be advantageously given up altogether.

For the purpose of injecting the prostatic portion of the urethra, Dr. Otis uses a double-bodied tube, one chamber continuous with that of the syringe, and from which the fluid is thrown out by means of several fine openings at the free end; the other acting as catheter, and indicating, by the passage of a few drops of urine, that the point of the instrument has gone far enough. So soon as this happens, the farther exit of urine is cut off by means of a wire stilet, and the injection is forced out of the openings a little in front of the neck of the bladder.

Dr. Robert Taylor has also invented a very clever instrument for injecting the posterior part of the urethra.[1] It consists of a "hard rubber" tube about six inches long, with an acorn-shaped bulb, perforated on its tapering sides with twelve very minute holes, arranged in four rows of three holes each. The apex of the bulb is rounded, to avoid injuring the folds of the urethral membrane when it is introduced. The size of the tube varies from four to ten, English bougie scale, and the widest part of the bulb is two sizes larger than the shaft. A button of hard rubber slides upon the shaft to regulate precisely the spot to which the injection is to be

[1] American Journal of Syphilography, etc., vol. i., p. 379.

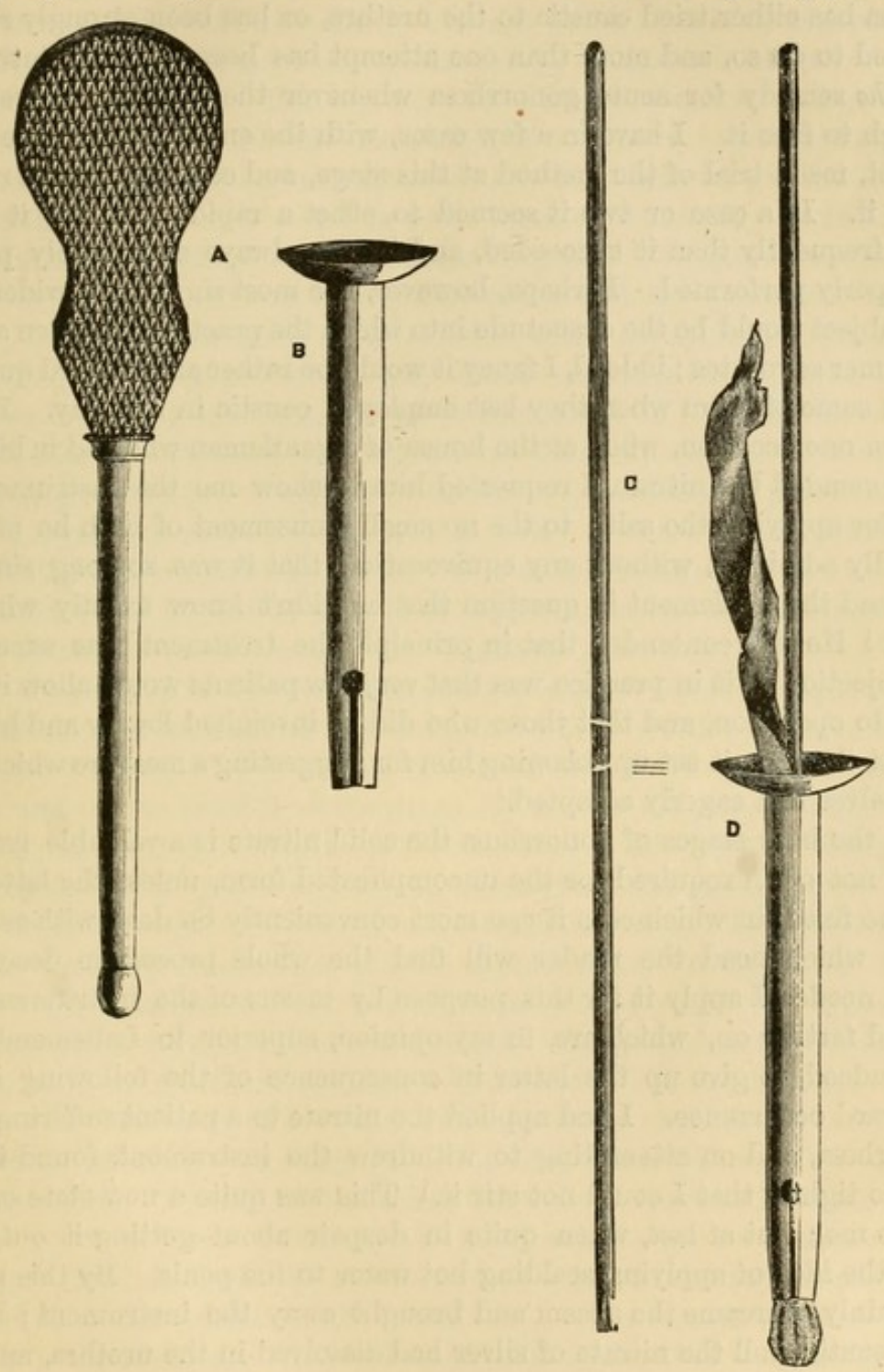
applied. The advantages of this mode of construction are that regurgitation is obviated by the shoulder of the bulb, that the smallness of the holes prevents too much fluid being thrown in at one time, and that the bulb serves instead of a ball-staff to explore the urethra.

For any fluid except the nitrate both plans are no doubt excellent, but with the use of this salt begin our difficulties. The tip of the syringe must be oiled to admit of its gliding gently down the urethra, and the oil, uniting with the oxide of silver, forms a tenacious black paste very difficult to dislodge, and tending constantly to close even a tolerably large orifice. Consequently I have long given up this method, and possess now the first syringe of this kind which I had made many years ago, and in which I subsequently had the fine holes plugged and a large one made at the apex; a mode I decidedly prefer.

The Caustic Plug.—But when the discharge is simply persistent, without there being any evidence that the morbid action has extended backward, then the application of the nitrate of silver for a prolonged period, in the manner now to be described, is sometimes beneficial. A slip of thin calico, two inches to two inches and a half long and a quarter of an inch wide, is first of all soaked in solution of nitrate of silver from five to ten grains to an ounce, and then introduced into the urethra by means of the canula shown in the drawing on opposite page. As this method is of course not often resorted to until a gonorrhœa has endured some time, it will seldom be necessary to begin with a weaker solution than five grains. The surgeon having passed down the saw-handled stilet, A, and the canula, B, sheathed and oiled, withdraws the former, and then, doubling the end of the linen over the point of the long stilet, C, passes it steadily through the canula, as seen at D, till it reaches the mark ≡, beyond which no attempt should be made to push it; this done, the sheath is withdrawn over both. The stilet is then very gently "wriggled" out, and the calico left in the urethra, where the patient is directed to keep it as long as he can. In many of the cases which call for this treatment, it must be supplemented by means which act on the more posterior parts of the canal.

No fear need be entertained if, by any unforeseen movement on the part of the patient, the calico should slip into the urethra, as it will soon be expelled. One day I was inserting a plug, the patient turned suddenly, and the calico vanished. I made no effort to recover it, and nothing more was seen of it, neither could I then or afterward detect it by examination or by the bougie; and as the patient all along made water with ease, I felt certain it had not remained in the urethra. A few days afterward the same accident occurred, and I requested the patient to keep watch for it; in two or three hours he reappeared with the plug in his hand; he had found it in his trousers. Indeed I suppose it always makes its exodus in this manner. I have known the same thing occur several times when a tolerably long piece was used.

In America a sponge saturated with a strong solution of nitrate of silver is occasionally employed. It is introduced by means of a canula for about two inches down the urethra, and the canula being partly withdrawn, the sponge is brought into contact with the walls of the passage, where it



is left for a minute or two, and then slowly removed by twisting it gently on its axis. This plan was first devised by Dr. F. Campbell Stewart, of New York, and is favorably spoken of by Dr. Bumstead,[1] who has em-

[1] Op. citat., p. 77.

ployed it, and says that we can limit the extent of the application at will, and can therefore use a stronger solution. Unless the sponge were strengthened, I should have thought it very liable to break.

Cauterizing the Urethra.—I suppose every surgeon who has to treat gonorrhœa has either tried caustic to the urethra, or has been strongly recommended to do so, and more than one attempt has been made to introduce it as *the* remedy for acute gonorrhœa whenever the patient was resolute enough to face it. I have in a few cases, with the entire concurrence of the patient, made trial of the method at this stage, and certainly cannot recommend it. In a case or two it seemed to effect a rapid cure, but it failed more frequently than it succeeded, and it was always abominably painful if properly performed. Perhaps, however, the most significant evidence on the subject would be the desuetude into which the practice has fallen among its former advocates; indeed, I fancy it would be rather an awkward question to ask some of them when they last employed caustic in this way. I know that on one occasion, when at the house of a gentleman who had in his time recommended the nitrate, I requested him to show me the instrument he used for applying the salt; to the no small amusement of both he at once candidly admitted, without any equivocation, that it was so long since he had used the implement in question that he didn't know exactly where to find it! He still contended that in principle the treatment was excellent; the objection to it in practice was that very few patients would allow it to be put into operation, and that those who did so inveighed loudly and bitterly against the pain it set up, blaming him for suggesting a measure which they themselves had eagerly accepted.[1]

In the later stages of gonorrhœa the solid nitrate is a valuable remedy, but is not often required for the uncomplicated form, unless the latter has become fixed, in which case it can most conveniently be dealt with as gleet, under which head the reader will find the whole procedure described. When needed I apply it for this purpose by means of the instruments described farther on,[2] which are, in my opinion, superior to Lallemand's. I had, indeed, to give up the latter in consequence of the following rather untoward occurrence. I had applied the nitrate to a patient suffering from gonorrhœa, and on attempting to withdraw the instrument, found it was held so tightly that I could not stir it. This was quite a new state of matters to me; but at last, when quite in despair about getting it out, I hit upon the idea of applying scalding hot water to the penis. By this means I certainly overcame the spasm and brought away the instrument; but in the meantime all the nitrate of silver had dissolved in the urethra, and the torture the patient endured was a lesson I have not forgotten. Dr. Hum-

[1] Mr. Johnson mentions a case of death from the use of the nitrate in this disease. Op. citat., p. 58.

[2] In the sections on "Strong Tendency to Stricture" and the "Treatment of Gleet."

phrey was even more unfortunate. In his case the instrument broke, and the part containing the caustic was left in the patient's prostate.[1]

It would be wasting the reader's time to mention at length some of the remedies (?) which have been recommended for acute gonorrhœa, such as compression of the urethra, passing a bougie into the bladder, etc., etc., for the simple reason that most of them cannot be carried into effect.

Blistering the Penis.—If at the end of a week there were no change whatever for the better, or if at the expiration of twelve to fourteen days the case were not progressing satisfactorily, or if fixed pain on the lower part of the penis had set in, I would, in every instance where the decision was left entirely to myself, proceed to blister the penis. I do not, of course, expect such a system will ever be popular, either with the profession or the public; but I have no doubt as to its value, and I see nothing to be gained by putting off measures which will almost certainly be required. The more too I see of gonorrhœa, the more confidence do I feel in blistering. The late Mr. Carr Jackson, who derived his first impressions of blistering from seeing cases which I had treated in this way, carried the practice quite as far as myself; he stated to me that in every instance where there was not a visible improvement by the end of a week, he blistered the penis if the patient would permit it, a mode of treatment which, he said, had succeeded admirably in his hands. Mr. Chalmers Miles was quite as enthusiastic;[2] after a trial of the treatment in sixty cases he formed a high opinion of its efficacy. As most of his patients were soldiers who had been debauching, he used to begin by giving an emetic so soon as the patient was admitted, and on the evening of the same day a couple of purgative pills, followed by an aperient draught in the morning. After this a blister, six inches by four, was placed high up on the anterior and inner part of each thigh; these were put on at night and left till morning. They were made with the ordinary cantharides plaster, spread rather thickly on adhesive plaster. The blistered surface was afterward dressed with lint dipped in castor-oil, and a saline aperient was ordered. The patient was put on spoon diet, and told to inject now and then a syringeful of cold or lukewarm water, according to the season of the year. At first he found there was every possible variety of result: generally the symptoms were aggravated, but this soon passed off. On the third morning the patient was usually better. *By the sixth day there was no running, and on the seventh day the man was discharged, fit for duty, with one day's convalescent leave.* In milder cases he blistered the under surface of the penis, but in other respects treated the patients in the same way. *He had repeated instances of an immediate cure by a single application.* Sometimes the patient was discharged cured on the fourth morning after admission. When a relapse happened from the men getting out and giving way to a debauch, an injection or two of nitrate of

[1] Holmes's System of Surgery, vol. iv., p. 605. 1864.

[2] Lancet, vol. i., p. 558. 1861.

silver would generally soon stop it, and if not, blistering the thighs was sure to succeed. When any pustules followed the blister they were pricked, squeezed, dressed with a linseed poultice, and then rubbed over with castor-oil.

Mr. Miles's experience of the treatment by blisters was that it proved more speedy and effectual than any that he knew of; that it was suitable to all classes of cases; *that the period required to cure gonorrhœa in this way was from four to seven days*, though in some rare instances it might extend to fourteen; that relapses seldom occurred, and then only after a debauch or some imprudence; that such relapses always yielded to blisters; that there were no obstacles to the use of them; and finally that men employed in the civil departments voluntarily came to him to be treated in this way.

This treatment, which Mr. Miles says was first suggested to him by Mr. Park, surgeon to the third brigade at the Royal Artillery Hospital at Devonport, who told Mr. Miles that he had adopted the plan with great success for a considerable time, has, he says, not merely the advantage of effecting a rapid cure, but of stopping, in a most summary way, a trick by which soldiers used to evade punishment, and of restoring to the ranks a great number of men who used formerly to be on the sick list. It is a very common circumstance, just prior to a garrison field-parade, for the men to go out "on pass," and, as a natural result, catch an infection. Prior to their being taken before the commanding officer, they are brought to the surgeon for inspection, and when found to be suffering from gonorrhœa are placed under treatment; blistering, however, he found, soon restored them to active service. Again, men who were sentenced to punishment as defaulters, used frequently to report themselves infected; in consequence they were sent to the hospital, and thus escaped punishment. This, too, blistering soon stopped. Furthermore, I know that many surgeons have adopted this method both in private and hospital practice; and as regards the patients themselves, I should, if it were allowable to appeal to such a tribunal, be quite content to abide by their decision.

As what I said on the subject of blistering has drawn forth some remarks, I take the opportunity of placing the subject in its true light. I never thought of claiming the credit of having *discovered* that blisters cure gleet. I knew that blisters to the perineum had been recommended long before I was born; nay, even in Hunter's time they were used for this purpose, as also to the under part of the urethra,[1] and Howard confidently looked forward to great benefit from their use; but I believe that, if other

[1] Hunter simply speaks of two cases of this treatment having been mentioned to him; I do not observe that he ever employed it himself or saw it employed. Op. citat., p. 106. Swediaur says that gleets have been cured by a blister to the parts affected, or to the perineum. Op. citat., p. 63.

surgeons than those mentioned by Hunter and Swediaur had ever resorted to blistering *the penis*, the remedy had, at the time when I broached the subject, fallen into complete desuetude; so much so that, except in the instances just referred to, I found no trace of the practice in the works I read. I certainly have met with a few injunctions not to blister the penis, which from their tenor I should have said were written by those who knew nothing of the matter, but this may be a misconstruction on my part. Of course, it is easy in all such cases to rake up some claim to priority. The merit of treating gonorrhœa in the acute stage by means of blistering is due to Mr. Chalmers Miles. I have heard blistering condemned as a violent remedy. I appeal to the fact that many patients, cured by it of gonorrhœa and gleet, have, on being a second time infected, blistered themselves of their own accord.

In order that a blister may be properly applied, there are some points which, however trivial they may seem, require as much attention as the leading features of the case. Where these are neglected, blistering is apt to produce such a filthy mess, that the patient will not submit to it a second time; whereas, if carefully laid on and dressed, it is, from the part being out of the reach of friction in the ordinary movements of the body, even less troublesome than if on a limb or the trunk. Before putting it on, a little of the hair at the root of the penis is cut off; a piece of paper is next fitted on the penis, and cut till it exactly covers it from the root to within half an inch of the mouth of the urethra. This is then laid down on the blister, which is cut out by it, wrapped round the penis, and fastened with threads behind the glans and near the root. The patient should remain quiet while the blister is on, lest it should come into contact with the scrotum and vesicate it, which is very soon done. He should not, however, apply it at bedtime, as he will most likely fall asleep and not awake till the penis is one mass of vesications, a state productive of needless sufferings.

In mild cases, or where the skin is very tender, an hour and a half or two hours will often suffice; the blister is then removed, and if there are any vesicated spots they are, after pricking the bladders with a needle, to be covered with pieces of linen or lint spread with benzoated zinc ointment; a layer of cotton wool is bound over these and kept in its place by means of worsted, or two small india-rubber rings; or cotton wool alone is employed as a dressing without any ointment at all, and this is perhaps the best, as it is the simplest, plan. It sticks to the surface certainly, but the adhering part falls off as the vesicated skin heals. When a more severe case renders free blistering necessary, it must be kept on three or four hours, sometimes longer, but always till the penis is blistered. To protect the part from chafing, a T-bandage, with a linen bag sewed into the part which receives the penis, or a handkerchief tied round the waist and dipping down in front so as to keep it tight up, will be found necessary. The first effect of the application is to increase the discharge in some persons,

in others this is not seen. In either case it generally soon grows ropy or mucous, and finally disappears in a few days, or remains somewhat more persistent, requiring a few injections when the penis is so far advanced toward healing that it can be handled without pain. It may, however, demand even a second blister. One of the most cleanly, convenient, and least painful forms of blister is Brown's cantharidine tissue ; it causes less irritation than the emplastrum lyttæ. Dr. Durkee prefers cantharidine collodion to blisters.

The blistering fluids, if strong enough to vesicate, caused such pain that I soon renounced the employment of them in most cases, though they are very useful applied to the perineum. I say most cases, because there are patients in whom the skin of the penis is so exceptionally tough that the blistering tissue will scarcely touch it. In these instances they may be resorted to. Beyond the pain, however, I never had any untoward results from the use of the vesicating fluid but once. In the case I speak of, the patient warned me that he was a " bad subject ;" whatever he had he suffered severely from. He had used the tissue ineffectually, and I therefore prescribed Bullin's fluid, enjoining him to apply it very gently, instead of which he put in a most unnecessary quantity. Intolerable burning pain and swelling of the organ set in, and about a sixth part, I should think, of the surface of the penis went into ulceration, looking like a bad form of multiplying sore. The patient, notwithstanding the free use of sedatives, suffered severely, but was recovering when I last saw him. He was then on the eve of leaving London.

For three or four days after the application of the blister, the quieter the patient is the better. So soon, however, as the blistered surface begins to heal up, a few mild injections may be given.

Blistering the perineum is not often called for in the early days of gonorrhœa, even when the inflammation has extended all along the urethra ; consequently I have very seldom employed it in such cases, although I have never had, and should not have, the slightest hesitation about recommending it if it seemed desirable to do so. In gleet, however, it is often imperatively demanded, and therefore it seemed to me that it would conduce to clearness of arrangement if the directions for this process were given in the chapter on this phase of the disease, where accordingly the reader will find them.

It may be safely laid down as a rule, from which we should never suffer ourselves to depart, that the action of the treatment should be daily gauged, if I may so express myself ; that is, *we should never rest satisfied unless daily progress is made toward a cure.*

This is easy enough in most instances, but in more refractory forms of the disorder we are often baffled in our pursuit. Here we must look to attain our object, not by an incessant and aimless change of treatment, under the supposition that the urethra or the system is accustomed to the

remedy; that this will no longer act upon the disease, and that another will now have a greater effect than if used at first, *but by measures expressly adapted to the case in hand.* When really efficacious means have failed, we may generally rest assured that there is some complication—some faulty point which requires to be ferreted out, at whatever expenditure of time and trouble. To leave the disease to wear itself out—to recommend change of air with this view, is virtually to abandon the case and confess our inability to cope with it.

If the stomach be deranged and the tongue foul, the use of nitric acid and bark, or tincture of cinnamon and gentian with dilute sulphuric acid, will often relieve these symptoms and hasten the cure; where the bowels or liver are sluggish, mild doses of calomel, or blue pill and rhubarb, may be used. Mr. Johnson says he has cured gonorrhœa with sarsaparilla and iodide of potassium after all the specifics had been used in vain, and that in such cases he has also more than once prescribed with benefit three grains of blue pill and one of ipecacuanha every night, followed by an aperient mixture in the morning, accompanied or succeeded by injections. Whatever the complications may be, they must be treated as if they occurred along with any other disease. The surgeon must use his own discretion, and at the same time bear in mind that the possibility of good arising out of these measures should not exonerate him from the necessity of at once taking further steps. They form but one branch of inquiry—*there may be a long-neglected local mischief.*

When an obstinate case is brought to the surgeon, and it is found that no impression is made upon it by this treatment, fairly kept up for two or three weeks; when in a recent case, after the same space of time, the disease does not seem to be giving way; when, after putting on the semblance of a cure, the disease steadily returns, and even grows worse; when there is a fixed pain on erection,—*the urethra should at once be sounded,* to ascertain with certainty that there is no stricture either formed or commencing. Should this unfortunately prove to be the case, it is scarcely necessary to say that the treatment of the gonorrhœa, at least so far as regards injections and medicines, must be postponed. However, generally what cures stricture cures also the gonorrhœa.

When the case is complicated with acute inflammation of any of the structures surrounding the urethra, such as the cellular tissue around the membranous portion, the prostate, etc., a totally different treatment is requisite; and the reader is referred for further details to the chapter on complications. But if, on careful examination, no such complication can be detected, then the case may be removed from the ordinary category and considered as gleet, respecting the special treatment of which, also, full directions will be given.

Patients naturally think that when the discharge has once ceased they are quite safe, and can do as they like. This is a great mistake. The run-

ning, after having entirely disappeared, frequently comes back, sometimes in three or four, sometimes in seven or eight days. It has been observed to return at the expiration of a month.[1] This I have not seen, but I feel assured relapses at shorter dates are so frequent, that I think *treatment ought always to be continued, more or less actively, for quite eight days after the last drop of discharge has shown itself.*

B. *In the Female.*—In the acute stage, whatever part or parts may be affected, I would advise precisely the same internal means as for the corresponding period of gonorrhœa in the male; that is to say, preparations of potass in almost identical doses, and the aperient pills directed to be taken along with them. Delicate women may require smaller quantities of the former, but I have never yet, in these cases, found the aperient act too strongly. The patient should rest as much as possible, and pain, wherever it may arise, should be combated by means of opiates. The employment of these is never desirable if it can be avoided, and some persons have a superstitious dread of such measures; but the pain is a greater evil than the remedy. At the beginning the best injection is, I think, simple water, but even that should not be employed till the patient can pass the tube of the syringe up the vagina without severe pain. A few days' rest will generally secure this point, and I have never seen any harm arise from this brief delay. After two or three days' use of the warm water, a very weak solution of lead or zinc may be thrown up. The hot hip-bath and hot fomentations may be ordered, but the full-length hot bath as directed for men is, to my thinking, more efficacious in relieving discomfort.

Generally these rules serve all useful purposes. If faithfully carried out, they often cure the disease without anything farther being done, and rarely fail to mitigate the severity of the symptoms, while in no single instance have I seen any troublesome complications ensue where they had fair play. But it may just as easily as not happen that we do not see the patient till the disease has become chronic, and perhaps fastened with great obstinacy on some part. I propose therefore to take this section of the subject rather more in detail.

In chronic *vaginitis* the remedy I prefer to begin with is the liquor potassæ in twenty minim to half-drachm doses. It may be given twice a day in half a tumbler of good milk. Should the appetite be bad, and the patient in low health, as is often enough the case, a full dose of quinine wine may be taken daily once or twice, about half an hour before a meal being, perhaps, the best time; or from five to ten grains of the citrate of iron and quinine, with just as many minims of the spirit of chloroform, may be prescribed instead.

The state of the bowels should be strictly looked to. Many women so habitually neglect this function that it is surprising they do not suffer

[1] Hunter: Op. citat., p. 94.

more. In such cases purging is generally borne very well indeed, and the pills mentioned previously, of colocynth and hyoscyamus, may be used nearly every night. If the patient should happen to be in a state of great prostration, or liable to suffer severely from giving mercury in any form, the extract of chamomile may be substituted for the blue pill. And, in my opinion, *the worse the patient bears aperients the more does she need them.* A woman, who suffers severely from the use of a mild pill, has a much less chance of recovering quickly than a healthier person ; she is in such a state of prostration that tonics alone will not rouse the flagging nutrition and assimilation of the frame. However puzzling this statement may appear, I can confidently offer it, and I think it is just in very bad cases that the surgeon will see the beneficial effects of purgatives in the most marked degree.

A regular crusade should be begun against that baneful habit of staying so much indoors which some women indulge in. Half these chronic discharges would never be heard of if women would go out every day ; in fact, it is out of the question that either mind or body can be in a healthy state under a system of slow poisoning with bad air.

Injections.—In respect to injections a much greater latitude may be given than in men ; for often, in the commencement, nothing beyond a stream of warm water can be borne by some women, and in others strong injections are soon tolerated. It is perhaps better, therefore, to begin with mild measures. For ordinary cases I have found nothing superior to sulphate of zinc. Very profuse discharges may and do sometimes require stronger measures, and then the decoction of oak-bark may be used with the best effects.

It is particularly requisite that the patient should thoroughly understand how to inject herself, which should always be done in the recumbent position with a pillow under the hips. A good-sized india-rubber bag, with two flexible tubes, one hanging in the basin holding the injection, the other, to introduce up the vagina, furnished with a blunt end, is the best instrument I know of. The vagina should be thoroughly washed out previous to the injection being thrown up. Sometimes it answers better to plug the vagina with lint soaked in the zinc solution. But in obstinate vaginal gonorrhœa, after pain has ceased, I should say the application of the nitrate of silver is the best remedy yet discovered. The speculum is introduced, well oiled, as high as it will go, and then, all discharge being first carefully wiped away by means of a piece of lint firmly tied to a stout stilet, a stick of nitrate of silver is applied to the os uteri, the speculum is withdrawn, and the nitrate, quickly rotated, is brought into contact with the whole of the vagina till the labia are approached, when it is at once withdrawn. Some very alarming accounts have been given [1] of the dangers and suffering which must necessarily arise

[1] Medical Gazette, vol. xx., p. 310.

from such a source, but they are refuted on ample testimony; men who used the nitrate in numbers of cases, such as Dr. Egan,[1] Mr. Henry Taylor,[2] Dr. Palethorpe,[3] Mr. Thomas Nelson,[4] and many others having given strong evidence in favor of the harmless nature of the practice. Pain, however, I have certainly seen, lasting for a good while, after even a gentle application of the nitrate, and that too, sometimes, in women whom I should not have thought very sensitive. I have observed no other bad effect, though I have applied the nitrate pretty freely to the vagina and os uteri. Dr. Tyler Smith says[5] that loss of uterine substance may be caused by the prolonged use of the salt. I feel rather doubtful about the fact, and have elsewhere given my reasons for thinking that caustics of this class do not destroy sound tissue, and only act upon what would sooner or later be removed by disease.

For a time, at least, it seems as if the property of conveying the infection was extinguished in the vaginal secretion by the nitrate, most probably solely by the chemical action of the salt. I certainly have known, in a pretty large number of cases, that connection has taken place after using the nitrate while the vagina was in a most unhealthy state, for I speak of cases where I have applied the nitrate myself, and yet no infection has ensued.

Many years ago Sir J. Simpson introduced suppositories, which were inserted into the vagina.[6] They were composed of zinc, lead, etc., white wax and lard. Each weighed about a quarter of an ounce, and was coated by dipping it into an ointment of wax and resin kept liquid by heat. Since then they have been introduced more and more into practice, and numerous other ingredients have been tried. Some of the leading American physicians make use of them. For instance, Dr. John Black, of Philadelphia Hospital, finds[7] suppositories very useful in vaginal gonorrhœa, those containing twelve drops of the liquor of persulphate of iron affecting a cure in the shortest time, an average of nine days, being a remarkable contrast to the experience of M. Ricord as to the time required for the removal of the complaint. He considers suppositories far superior to either injections or plugging. Dr. Gaillard Thomas also employs suppositories,[8] applying them to the cervix uteri by means of a hard rubber tube, in the mouth of which the apex of the cone of the suppository is fixed, where it adheres with sufficient tenacity for the required purpose.

My trials, however, with suppositories were unsatisfactory, and I have not seen valid reason for preferring them to the nitrate, especially when

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[1] Dublin Quarterly Journal, vol. v., p. 312.

[2] Medical Gazette, vol. xxi., p. 63. [3] Ibid., vol. xx., p. 256.

[4] Report of the Committee on the Venereal Disease, p. 113. 1868.

[5] Op. citat., p. 203. [6] Edinburgh Monthly Journal, p. 886. 1848.

[7] American Journal of the Medical Sciences, vol. l., p. 65.

[8] A Practical Treatise on the Diseases of Women, p. 160. Philadelphia, 1875.

assisted by the medicines recommended, and occasional blistering, from which I have observed good results, with proper diet. Indeed these measures have generally seemed to me quite sufficient to remove vaginitis, and with the disappearance of this, any affection of the urethra, if present, and of the mucous membrane of the vulva, has also yielded ; nor have I as yet seen the disease, when thus treated, extend to the womb and ovaries, or to the bladder. There are, however, some complications which may require further steps, and which, unsystematically enough I have preferred to take here, so as not to break the thread of discussion, and to leave the ground open for the more lengthy examination required of complications in the male.

Foremost among these stands *chronic inflammation of the canal of the cervix*, shown usually by the formation of the stringy plug of mucus mentioned in the first chapter, often enough accompanied by an unhealthy state of the lips of the uterus. The plug should be removed, and then the nitrate may be gently applied to as much of the surface secreting it as can well be reached. When the appearances indicate ulceration, or rather epithelial denudation, I believe one of the best remedies, certainly that which I myself prefer, is the caustic soda very lightly applied by means of the speculum. At the Lock Hospital they first secure coagulation of the discharge from the womb, by means of a strong astringent like alum, and then remove it, after which a strong solution of nitrate of silver is brushed over the cleansed surface. Connection had better be abstained from, even when the disease seems dying out, but only too often this recommendation is not attended to. Rollet says,[1] that connection will bring on relapse after relapse in blennorrhagia affecting the neck of the womb, till even the parenchyma of the organ becomes involved.

As to the treatment of *discharges from the womb itself*, about the frequent occurrence of which, so far as concerns their gonorrhœal nature, I am somewhat sceptical, I must at once say that I do not feel at all convinced of the necessity for the employment of solid caustics ; while direct applications, in a liquid form, to the interior of this organ, are apt to be followed by nervous symptoms of a rather alarming nature. I therefore advise that treatment should be confined to the means pointed out.

But the substance, appendages, and investing membrane of the uterus are liable to become affected by a very serious form of inflammation from gonorrhœa. Dr. West holds[2] that when acute inflammation is set up in the unimpregnated uterus by gonorrhœa, it begins in the interior of the viscus and extends outward ; and that, though it may involve the muscular substance of this organ, it does so to a much less extent than the lining membrane. He considers that such inflammation should be attacked en-

[1] Annales de Dermatologie, tome i., p. 110.

[2] Lectures on the Diseases of Women, p. 96. 1864.

ergetically, as, if not, they naturally pass into a chronic state, in which, if the patient's danger be lessened, the chances of recovery are also lessened. He therefore always advises local, and sometimes also moderate, general depletion, followed up by hip-baths, anodynes, and poultices with laudanum. If pain in either iliac region, and still more if any distinct swelling in this part, point to involvement of the ovary, he applies small blisters. Disposition to pass into a chronic form he meets by a mild mercurial course.

The treatment advised generally for this group of cases by Dr. Noeggerath, of whose extreme views I have already spoken, is as new to me as his theory, and consists in giving quinine to the extent of ten to fifteen grains every eight hours. When great pain is present, and the disease proceeds too rapidly to admit of being treated with quinine, he orders tincture of opium, twenty to eighty minims at a dose. If opium be not well borne, we may prescribe codeia, and apply ice-bags to the abdomen.

Ovaritis I have only met with in the subacute form, and in all the cases I have seen the affection had either begun before the patient came under my care, or showed itself within a short time after the first visit; being always, so far as I could make out, due in some measure to neglect, overwork, too much exercise, improper diet, and so on. Mercury and opium in pretty full doses, hot bathing, rest, and low diet have usually proved sufficient, though in one or two cases I have thought it as well to employ the chlorate of potass in addition. Subsequently blistering is often of service.

Ricord mentions a case of acute ovaritis from this disease, and de Méric quotes [1] one from Mercier. The patient was suddenly cut off by typhoid fever. Post-mortem examination showed that the gonorrhœal inflammation had extended to the uterus and along the Fallopian tubes, the fimbriated extremity of the left tube being destroyed, and the canal obliterated. Mr. de Méric also gives three carefully recorded cases from his own practice. In the first the patient was a woman, thirty-two years of age, infected with gonorrhœa by her husband. She was feverish, and the pain was severe enough to confine her to bed. The disorder yielded pretty quickly to fomentations, a gentle purgative, an antimonial mixture, low diet, rest, and counter-irritation. In the second case the patient was also infected by her husband. The skin was hot and the pulse hard; there was severe pain in the left iliac region, and a profuse vaginal discharge. Fomentations, followed by large linseed poultices to the part, and warm poppy-water injections into the vagina, gave relief. Rest and cooling medicines were also ordered, and subsequently injections with counter-irritation over the ovary by means of blisters. In the third case there was high inflammation of the vulva and vagina, and the discharge, which was accompanied by considerable hemorrhage, was very profuse. This

[1] Lancet, vol. i., p. 628. 1862.

patient, moreover, suffered from pain about the right iliac region, running up to the crest of the ilium, which seemed to be of a rheumatic nature and of a most distressing character. Rest, poppy-water fomentations and injections, warm hip-baths, gentle purgatives, antimonials, subsequently narcotic frictions over the seat of pain, injections of alum and zinc, and full doses of opium were employed; but the symptoms yielded very slowly, a full month elapsing before there was any great improvement; whereas in the first case the patient was able to resume her household duties in about three weeks; and in the second, although the discharge had not ceased at the end of a similar time, the pain had yielded previously.

Mr. de Méric calls attention to the fact that in all these cases the ovaritis arose in the early stage of gonorrhœa, indeed within a very few days after it commenced. He considers that this circumstance, and the absence of any hard deposit in the ovary, like that in the epididymis after orchitis, militate against the analogy which has been thought to exist between the swelled testicle of gonorrhœa and gonorrhœal ovaritis. I do not think any weight can well be assigned to the latter; different tissues are in this respect differently affected by the same inflammation.

Mr. John Taylor also communicated two cases to the *Lancet*.[1] In one the symptoms were very severe; throbbing, agonizing pain extending to the back, small and frequent pulse, hot and dry skin, loss of appetite, sleeplessness, and pain on defecation and micturition. All this, however, yielded pretty quickly to rest, hot fomentations, calomel and opium, and saline aperients. Dr. Tanner, who was extensively consulted on such matters, held that, as a rule, full doses of iodide of potassium, with chlorate of potass will be found more beneficial here than any mercurial. In a case of gonorrhœa affecting a girl of fifteen, followed by endometritis, ovarian congestion, and ovarian neuralgia, Dr. E. T. Williams relieved the latter symptom with hypodermic injections.[2]

Dr. Tanner says[3] it is doubtful whether ovaritis is due to disease or to its treatment by astringent injections, copaiba, etc. I do not wish to pursue any writer into the remote and fanciful speculations which constitute a great deal of what is called pathology, but here the opinion of this indefatigable observer seems to me tinged with some want of reflection. The action of copaiba, unless it be considered *plus* the disease, must count for nothing, as it is constantly given for bronchitis without evoking the least trace of any such symptom; united with the disease it must go for little, seeing that ovaritis happens where it has not been employed. The same may be said of injections. I could not trace ovaritis in a single case to their employment. Two of the patients had not employed them, and they do not seem to have had any share in bringing on the mischief in the five

[1] Vol. ii., p. 51. 1862.
[2] British Medical Journal, vol. ii., p. 32. 1874.
[3] Op. citat., vol. ii., p. 356.

cases of acute ovaritis just mentioned. On the other hand, there is good reason to think that a tendency to this complication manifests itself in a certain proportion of patients, irrespective of any treatment whatever, just as, in the opposite sex, a disposition to irritability of the bladder or orchitis shows itself, in a percentage of cases; and that this tendency is rendered more powerful by want of rest, errors of diet, and so on. To these points, then, the attention of the practitioner may be beneficially directed. M. Remy, who by the way utterly scouts M. Bonnière's anatomy of the lymphatics, denies[1] that the ovary is ever affected except through peritonitis following upon extension of the disease along the Fallopian tube; a rather startling announcement from an author who maintains that out of five women who contract gonorrhœa three have the uterus affected in this way, and that this organ is so susceptible of the disease that it is constantly attacked when other parts do not suffer.

Some of the French surgeons cauterize the *urethra in* the female when it is the seat of purulent discharge, and give no specifics at all. The results are spoken of as most encouraging. Personally I have no experience of the nitrate here, but I see no particular objection to it if employed with discretion. Dr. Bumstead injects the urethra when the case is obstinate.

Duverney's glands sometimes become affected in the course of this disease, and it would really seem that their ducts participate in the extension of the gonorrhœa. Tiedemann was, I believe, the first who noticed the former of these facts, having derived the hint from Fricke of Hamburg.[2] Dr. Mathews Duncan published, in the *Edinburgh Medical Journal*,[3] a case of gonorrhœa occurring in a girl of seventeen, where these bodies were involved, being hard and tender. Pressure upon the affected part, on the right side, caused about a drachm of gelatinous, blood-stained fluid to exude. The disease seemed to be quickly removed by bathing, first with hot water and then with liquor plumbi. These bodies, the ducts of which open on the inner aspect of the nymphæ, outside the hymen or carunculæ myrtiformes[4] are, I suppose, the bodies described by M. Huguier as vulvo-vaginal glands, the orifices of which open at this site, although there are exceptions to this, which sometimes make it difficult to find their mouths. M. Salmon communicated,[5] to the Academy of Medicine some cases of gonorrhœa affecting these ducts; a malady pointed out by M. Huguier, not easily detected, but for all that capable of conveying infection. It may be the only sign of disease, and its existence is detected by pressing from behind forward, in the direction from the ischium to the carunculæ. It is most frequently met with in the young, and on the left side, M. Salmon

[1] Gazette Médicale, p. 7. 1879.

[2] British and Foreign Medical Review, vol. xvi., p. 156; Holmes's System of Surgery, second edition, vol. v., p. 214.

[3] Vol. xviii., p. 277.

[4] Quain's Anatomy, vol. ii., p. 458. 1876.

[5] Union Médicale, tome viii., p. 582.

having found it there six times in eight cases. Injection of nitrate of silver with Anel's syringe, and cauterization with tincture of iodine by means of a fine bougie, or with solid nitrate, proved useful.

Some women manifest a tendency to *abscess in the labia majora.* Like all other complications of the same kind, the vigorous use of tartar emetic and hot bathing, as recommended in the treatment of perineal abscess, is, so far as my experience goes, the only treatment to be relied upon. When once the abscess points, I believe authors are agreed that it should be opened, and that if allowed to burst the case may prove very obstinate.[1] In abscess of the vulva M. Ricord recommends,[2] that before it becomes chronic it should be freely opened parallel to the axis. It is then treated by compression, and later on the track is filled with powdered nitrate of silver, or a thread of lint soaked in acid nitrate of mercury is passed along by means of a blunt probe. He effected a cure in one very obstinate case by scarifying the part freely with the urethrotome.[3] Of the *inflammation of the erectile tissue of the vagina* described by Mr. Johnson I have no experience. Indeed, he only saw one case, and that proved extremely obstinate.

When *excessive menstruation* is present, I believe the exhausting drain will almost always be arrested by the infusion of digitalis in drachm doses, given two or three times a day, with the same quantity of syrup of orange peel and six drachms of valerian infusion. The time for taking it is generally restricted to three days, beginning with the first dose on the second or third day of the catamenial flow.

The persistent *pain* in the back, loins, sacrum, and coccyx, from which some women suffer, is generally relieved by rest, hot bathing, diffusible stimulants, and strict attention to the health. Sometimes a warm belt or opium plaster is requisite.

There remain one or two points of treatment, the consideration of which I have reserved till now, both because they are partly local and partly general, and because the remarks to be passed upon them apply to their action in all varieties of gonorrhœa. These points are the use of the cold hip-bath, of specifics, and of tonics, and the reader is to understand that what I have to say refers solely to their power over the running.

From the first of these I never saw the least benefit, while I have known it increase both pain and weakness. The process is exhausting, and, while conceding everything in its favor on the score of cleanliness, I think its action ought to be carefully watched. A strong solution of alum used in this way, has been recommended ; I tried it carefully, but saw no particular benefit from its use.

In opposition to the opinion of very good observers, I believe that specifics, such as copaiba, do exert some influence on vaginal gonorrhœa, as they do over most forms of profuse mucous flux. Those who contend

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[1] Durkee, op. citat., p. 181. [2] Traité Pratique, p. 681. [3] Ibid., p. 682.

for their purely local action, and for the limitation of this to parts over which the urine flows, seem to ignore that they act beneficially where no such explanation can be accepted, as for instance in profuse expectoration. M. Ricord's oft-quoted cases of artificial opening in the penis, where the copaiba only dried up the discharge in the part of the canal traversed by the urine, go for nothing here, and the occurrence might, perhaps, be due to deficient blood-supply to the distal part of the organ. But I believe that the disadvantages of giving specifics in such cases outweigh the benefits. They are rarely called for, and often fail in all varieties of gonorrhœa, except the urethral, which will get well without them; while the proposal to employ urine charged with their specific principles, as an injection, which has been more than once advocated,[1] is too revolting in its nature to need discussion.

It may be laid down as a principle that all disorder of the health should, as far as possible, be set right. Consequently tonics are not unfrequently called for, because many of these patients suffer from exhaustion and loss of appetite. Such symptoms they will often relieve, but I believe their power of arresting discharge is very slight, if indeed they possess any virtue of this kind.

Diet.—As to the diet best suited to gonorrhœa during the acute stage, whether in the male or female, there is, I believe, now but one opinion, namely, that it should be as light as possible, and that beer, wine, and ardent spirits should, as far as is practicable, be prohibited; now and then a little sherry or claret-and-water or gin-and-water, may be allowed as the *ultima Thule* of indulgence. This refers, however, essentially to the acute and early stage; later on a moderate amount of wine can be very well added to the bill of fare.

But though a rigorous exclusion of such articles of diet as are only calculated to do injury may be justly considered one of the most essential points of treatment, it is at the same time advisable not to curb the patient in too strongly, lest he should turn restive and break through all restraints; especially if he happen to be one of those erratic mortals who seek to escape from such restrictions by any loophole. The more simple and easy to observe the directions are, the more readily will they be followed out, both in spirit and letter. Moreover, the greater number of cases do not require such strict dieting; and instances where patients have recovered from severe gonorrhœa while actually overstepping all limits have tended to beget a spirit of scepticism, not only among them but also among medical men, as to their value in cases which really require restriction.

I have myself no great faith in vexatious regulations of any kind; I always fear they will prove too onerous to be practicable. Even the mild-

[1] Union Médicale, tome v., p. 112.

est system must occasionally be relaxed, and now and then a good chop and a pint of claret will do a weakly man more good than any starving.

The surgeon, then, I think, will do wisely in interdicting all spirits (except now and then a very little hollands or gin), strong malt liquors, pork, beef, curries, and such like—in admitting as little meat and wine as possible, and in recommending tea, fish, chicken, rabbit, poached eggs, milk puddings, arrowroot, tapioca, etc. But it will not do to compromise too much ; and if the patient will not submit to moderate restriction, the blame rests with him and not with the surgeon. The progress of science may one day reveal to us some substance capable of exercising more complete control over inflammations of the mucous membranes, something as potent, perhaps, as tartar emetic in inflammations of the cellular tissue ; then, indeed, we may free our patients from this burdensome watching, but *till then* we must combat the disease with such remedies as we possess, and one of these certainly is a moderately low diet.

If it be necessary to enforce these rules at the commencement, it is equally necessary to observe them to the end ; for a gleet which is just dying out, is, so long as the microscope shows pus in the secretion, easily converted into a gonorrhœa by a sudden return to stimulating food, and therefore the safest rule is to go on as at the very beginning till the discharge has entirely ceased for some days. I do not mean that the patient should starve himself to the very last hour, indeed, he should never reduce his strength by too low a diet ; but I do assert that he ought not to indulge in stimulants, a little wine, perhaps, excepted, and not revert to that excessive consumption of meat and beer which is so much the rule of life in England.

As to the diet of women little further need be said. I believe it cannot be too light and plain ; and as to the use of stout, jellies, soup, and food of a similar nature, constantly suggested by some over-kind friend or relative, it cannot be too strongly deprecated. The persistent use of what would try a ploughman's digestion is a step in the wrong direction, while of jelly we may be permitted to doubt whether it really contains any nourishing matter capable of assimilation beyond the wine used in making it, which is usually of the worst kind. Besides, it is quite a mistake to think that excessive feeding is ever requisite in such cases.

In the chapter on scalding I have stated my belief of the utter uselessness of *diet drinks*, and their inadequacy to relieve, even if they do not aggravate, scalding. The inference to be drawn from the arguments there used may be applied here. If the patient be very thirsty, the best diluent is water.

Smoking.—Men often ask whether smoking is injurious. I should have said that in moderation it could not be, and even in excess I have never traced any relapse or aggravation of the symptoms, though it makes

the patient low and nervous. Dr. Bumstead, however, thinks [1] it is hurtful. "I believe," he says, "that either smoking or chewing, especially in excess, relaxes the genital organs, and tends to keep up a urethral discharge."

I now proceed to examine the complications of gonorrhœa. As some of these, when judiciously handled at any rate, do not interfere with the treatment of the parent disease, while others must be overcome before we can hope to effect a cure, I thought it would be best, in a work devoted in great part to therapeutics, to adopt a purely arbitrary classification, and separate these symptoms into two groups; one comprising those which may be taken in hand at the same time, that is to say, complications which do not interfere with treatment; and another containing those which at an early period acquire such an importance as to require the particular attention of the surgeon, and which, in consequence, really do interfere with treatment. Such an arrangement is, I at once admit, highly unscientific, but I know of no better.

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[1] Op. citat., p. 83.

CHAPTER V.

TREATMENT—(CONTINUED).

Complications which do not Interfere with the Cure of Gonorrhœa.—1. Scalding: *Pathology.*—As it is most desirable that all statements made here should rest on the broadest possible basis, I shall first of all proceed to examine what light organic chemistry throws upon this part of the subject. One chemist tells us that "we can, by a judicious choice of food, bring the urine into any state that can be wished for." Mr. Durham pretty nearly endorses this. He says [1] it is easy to deprive the urine of its irritating acidity "by proper regulation of the diet and the free use of alkaline medicines." This view must, I submit, be accepted with some reservation, for the influence of these means, though considerable at times, is not unfailing.

The first point inquired into in my observations was, whether scalding depends upon the presence of any particular ingredient in the urine, derived from the gonorrhœa, because if any such could be detected some remedy might be found; but this I could not learn. However, I may have overlooked the right source, as organic chemistry is acquiring such dimensions that, at no very distant date, it will require a lifetime to master the works pertaining to the subject. Within the last twenty years alone the contributions have been so vast, that any person who is not a pure chemist and nothing else, finds himself, when once entangled in such a complicated matter, in the dilemma of a traveller who has fairly lost his way in some trackless waste.

However, I will try to make the best of the difficulty, and begin by giving the only specific information I have been able to meet with. It is taken from the carefully prepared work of M. Alfred Becquerel,[2] who says, "The existence of a simple blennorrhagia, whether acute or chronic, only produces in the urine a small quantity of muco-pus, rarely enough in quantity to render the urine alkaline. When the running is very great, it sometimes happens that the urine passed in the morning, on rising, contains more muco-pus than that passed at other periods of the day, that there is little albumen in it, and that it is less acid than usual." As this

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[1] Guy's Hospital Reports, third series, vol. xv., p. 470.

[2] Sémiotique des Urines, p. 475. 1841.

statement throws little light on the special subject of research, let us take the general state of the urine, and examine if any of its component parts will offer a clue to the enigma.

Dr. Golding Bird considers[1] it probable that the uric acid, just as it is separated from the blood, comes in contact with the double phosphate of soda and ammonia, evolving phosphoric acid, which thus produces the *natural acid reactions of urine;* and Sir Thomas Watson says:[2] "Modern chemistry teaches that the acid reaction of healthy urine is due to the acid phosphate of soda." This view is endorsed and enlarged by Dr. Harley, who thinks[3] that "the acidity of urine depends on the united presence of acid phosphate of soda, uric (hippuric) and lactic acids." According to Dr. Hassall,[4] "The acidity of the urine is principally due to the presence of acid phosphates; but in some cases, lactic and carbonic acids contribute to the acidity." Dr. Beale holds that,[5] "The cause of the acid reaction of urine is obscure, and probably does not always depend upon the presence of the same substance. Sometimes the reaction may depend upon carbonic acid, which is present in greater or less proportion in all the animal fluids." . . . . "A fixed acid reaction may be due to the presence of the acid phosphate of soda—a salt which exhibits an acid reaction without the presence of any free acid." He admits, however, that traces of free organic acids are found, and it is pretty certain, from what follows, that these acids are the lactic and hippuric. According to Dr. Roberts,[6] "healthy urine is generally acid. This arises chiefly from the presence of a number of acid salts—phosphates and urates; partly also from free acids—lactic, oxalic acids, etc."

Most likely then, so far as the scalding depends on the composition of the urine, its origin must be traced to the action of these causes of acidity, and its remedy be sought for in agents which counteract them. Uric acid, especially if in excess, may play some part here, as superabundance of it in the urine is sometimes accompanied by scalding. Sir Benjamin Brodie has not hesitated to say[7] that, combined with ammonia, it is the cause of acidity. Assuming, now, that the balance of power is to be divided between it and the acid phosphate of soda, I suppose it must be accepted that organic chemistry does not show us how we are to prevent their appearance. Harley says[8] that the amount of uric acid in the urine is materially lessened by a vegetable diet, but it will show itself even when no food is taken. Lassaigne detected it in the urine of a maniac who had fasted fourteen days, and Wagner observed that it was found in larger

[1] On Urinary Deposits, p. 95. 1857.
[2] Op. citat., vol. ii., p. 627.
[3] The Urine and its Derangements, p. 10. 1872.
[4] The Urine in Health and Disease, p. 23. 1859.
[5] Kidney Diseases, etc., p. 118. 1869.
[6] On Urinary and Renal Diseases, p. 48. 1876.
[7] Works, vol. ii., p. 539.
[8] Op. citat., p. 65.

quantity after fasting than when vegetable diet, or food freed from nitrogenous matter (?) was used. A similar statement has been made by Prout[1] with respect to its ammonia compound. Port wine and beer are said to increase the elimination of uric acid; tea and coffee to diminish it, and I may remark, as a fact to be afterward weighed, that I have several times had good reason to believe coffee aggravated the scalding. The action of medicines is also here somewhat opposed to experience. Phosphate of soda, liquor and bicarbonate of potass, increase the elimination of uric acid from the system; while acetate of potass, quinine, cod-liver oil and colchicum lessen the amount. Yet practical men profess to have seen relief of the scalding from the use of both liquor potassæ and bicarbonate of potass; and, as I have just said, this symptom will come on while the patient is under the influence of the acetate.

We become involved in a similar contradiction with respect to hippuric acid, which, according to Harley, possibly contributes in a great measure to the acidity of normal urine, and this author informs us that the largest amount of hippuric acid passed in the twenty-four hours is found to follow a purely vegetable diet; while Dr. Hassall says that "its presence, in most cases, is obviously connected with the free use of vegetable or other substances rich in carbon, as milk." Setting this against the action of different kinds of food on uric acid, the conclusion we must come to is, that what we do with one hand we to a great extent undo with the other; and I am not aware that there is any remedy, in the shape of medicine, which controls the elimination of hippuric acid. It may be remarked, too, that a light diet, in which milk usually plays a great part, contributes to the relief and prevention of scalding.

The lactic acid of the urine cannot, I think, be accepted as a factor, except in so far as it contributes its quota; that is to say, I believe it has never been shown that undue excess of it causes greater acidity than usual, and it is with this part of the matter alone that we have to deal. The other constituents of the urine, the acids which still remain, the salts, urea, uro-hæmatin, need not detain us, as there does not appear to be any evidence that, individually or combined, they exert, or are calculated to exert, any influence on the symptom in question.

I must now ask the reader's particular attention for one point in this question. Some years ago, Dr. Bence Jones asserted that urine lessens in acidity, and even becomes alkaline in some cases, for two or three hours after breakfast and dinner. Roberts, Harley and Beale have all discussed this statement. The first named author supports it in the most unqualified manner. Dr. Harley says he has been unable to verify it in perfectly healthy persons, but sees nothing improbable in it, "if the person experimented on has partaken largely of vegetable food;" certainly an unusual

[1] On Urinary Diseases, p. 81. 1840.

condition, in the shape of excess, with respect to breakfast. Dr. Beale says that Beneke made upward of a hundred observations without being able to confirm Dr. Jones's statement. In only one case did he find the urine alkaline. Sometimes the acidity was lessened, but this was not invariably the case. He found that the acidity of the whole amount of urine passed varied considerably, but could not discover the cause. "It seemed to be independent of the quantity passed and was not affected by exercise or food." With such discrepancy among very able observers and on so simple a thing too, we may well pause before we accept sweeping assertions about the control of food over the reaction of the urine, or give up the lessons of experience in favor of those issuing from the laboratory. It will not be necessary, for the sake of the system, to say anything about prognosis or results.

Treatment.—Remedies usually recommended.—After carefully reading every work and paper to which I could obtain access, I have not been able to obtain any information as to the best method of treating this and some other symptoms, which proved, when reduced to practice, of value. Numerous remedies, it is true, are indicated, but their effects did not quite correspond with the expectations which the accounts of them were calculated to raise. In order, therefore, to ascertain, as far as I could, their precise action, I first of all divided them into the four following classes :— 1. Anodynes—as laudanum, morphia, belladonna, etc. ; 2. Demulcents—as linseed-tea, barley-water, gum arabic ; 3. Diuretics—as nitrate of potass, sweet spirit of nitre ; 4. Alkaline remedies—as soda, potass, and magnesia.

With a view of avoiding every source of fallacy, these four classes were tried successively on a great number of patients ; every symptom connected with the advance or decline of the scalding in each particular case was registered in the blank forms already spoken of ; and the patients were for the most part examined every morning. At the same time nothing was omitted that seemed likely to hasten the cure, so that, as far as they go, the results obtained may be fairly viewed as a summing up of the action of these remedies on the symptom in question. The results were as follows :—

1. *Anodynes.*—The effects of these were most unsatisfactory. They were used in the form of

Laudanum.—In some cases, where there was severe pain from other causes, this remedy was pushed to the extent of a hundred drops in a day, yet even in such large quantities it only produced temporary relief of the scalding ; and in doses of this magnitude, even if it removed the symptom it was given for, the constipation and headache it brings on sooner or later would be sufficient objections to its use. *Morphia* in small doses was inefficient, and in large quantities objectionable, for the same reasons as opium. *Dover's powder* yielded the same results.

Hyoscyamus alone, or combined with salines, appeared in some cases to hasten the disappearance of scalding when injections were used ; but on

trying it singly it was found to produce no effect, so that the first impression must have been illusory. Applied externally it had no very marked action, and made a filthy mess—an inconvenience to which patients suffering under these complaints object most seriously. *Veratrin* and *atropin* applied in ointment produced torpor of the part, but no permanent relief of the scalding. Of the alkaline sedatives, such as bromide of potassium, highly praised for this purpose by some writers,[1] I have little experience, and that little is not favorable.

2. *Demulcents* exerted but very slight effect, though the patients, in some instances, drank as much as a quart of thick linseed-tea in a day. These remedies have been recommended by many writers, although not one of them seems to have ever examined their properties in such a manner as can alone justify a man in speaking positively about a point of this kind. From numerous observations, I am disposed to doubt whether they possess any of the virtues attributed to them, and whether they are not simply a relic of the old drenching system—a waste of time, labor, and patience; water, especially if pure, will, I believe, effect the same purpose much more cheaply and conveniently. They may possess a certain amount of negative value, *e.g.*, when a patient will not drink water, and the medical attendant finds himself compelled to order something, then he may direct barley-water, because it is less heating than coffee or any kind of wine, etc., but active beneficial power I do not believe them to be endowed with. Yet, to judge from what some writers say, it would seem that the most certain and pleasant mode of curing gonorrhœa, and averting such results as stricture, is to give plenty of demulcents internally.

As to the old explanation that they sheath the inflamed mucous membrane and thus prevent the acridity of the urine from acting on it, or envelop the urine itself (!), it sounds very like Cullen's wonderful theory of the acrimonious spiculæ in tabes venenata being sheathed by the oil absorbed, for this express purpose, from the cells of the cellular membrane into the blood. Perhaps the reader will say, why pursue with arguments an old doctrine which has well nigh died out of itself? But the truth is that it is anything but in a moribund state, and that it is virtually upheld by every man who asks us to believe that the mucilage, whether of the acacia tree or flax plant, passes unchanged through the capillaries of the stomach and the epithelial structure of the kidneys, which it must do to justify prescribing it in scalding.

3. *Diuretics* seemed to have some slight effect, and the solution of *nitrate of potass* in barley-water, half an ounce to a pint, appeared to relieve the scalding in many cases, just as *spirit of nitre*, gin-and-water, and tea do, namely, by producing an increased secretion of water from the kidneys. It displayed no power of materially benefiting this symptom so long as the

[1] Practitioner, vol. ii., p. 101. 1874.

diseased state of the urinary passage remained unabated. These remedies, however, are perhaps the most efficacious that have as yet been tried, and are perfectly harmless in anything like moderation.

4. *Alkalies.*—Of these, *the carbonates of soda, potass,* and *magnesia,* and the *liquor potassæ* were tried, both alone and combined with some of the other remedies. I was induced to use these from almost always finding the urine acid in gonorrhœa, especially as I had been repeatedly told that they were the best remedies for this symptom; and I was naturally enough rather anxious to find in some of these medicines a remedy against a symptom of which patients complain a good deal, and which, if not very important, is annoying; but the attempt was as unsuccessful as those made with the demulcents and sedatives. The following results were obtained from the observations made respecting their action :—

1. The urine became alkaline in some cases, but the acidity returned even when the alkaline remedies were continued.

2. This change was not accompanied by a relative change in the scalding.

3. This change ensued in some cases where no antacid remedies were used.

4. The scalding was relieved without the acidity of the urine being affected.

5. When the patients were seen but once a week, these remedies were used during periods varying from two or three weeks to as many months, without in some cases relieving the scalding, which, however, began to disappear so soon as the condition of the urethra improved.

6. In some cases, in the latter part of the acute stage, alkalies were of service when combined with other means, such as injections; but of less value in the early part of this stage, in which diuretics gave more relief.

7. In the scalding which sometimes very suddenly attacks those recovering from gonorrhœa, alkalies were often productive of positive harm, and tended to exasperate it.

8. Again, though the urine was acid in this stage (the decline), nitric acid was apparently often productive of relief. I say *apparently, because this scalding will sometimes come and go in forty-eight hours; and therefore it is extremely difficult to say what it is that carries it off.*

9. That scalding will sometimes occur in patients who have been treated, all along, with the preparation of potass which I have recommended for gonorrhœa.

10. That the presence of scalding need not delay the cure of gonorrhœa for an hour, and that its removal does not in any way promote or retard the influence of treatment, the question being one which simply affects the comfort of the patient.

After stating the results of my own observations, I think it only just to say that the late Mr. Weeden Cooke came to very different conclusions.

He tells us [1] that scalding is the result of the acid urine passing over the highly inflamed surface of the urethra, and that this symptom should be remedied by the administration of alkaline carbonates, with the view of neutralizing the acidity of the urine, *and thus removing the principal cause of the continuance of the inflammation.*

It is often very difficult to make the urine alkaline, though this *may be* accomplished by overwhelming doses of alkalies. Thus Wagner [2] found that two drachms of carbonate of soda rendered it alkaline in three-quarters of an hour, which, however, could be only a transient state unless the action were maintained by fresh supplies. Indeed, the alkaline reaction in this case only lasted three days, while two drachms of acetate of potass only made the urine alkaline for sixteen hours. According to my own observations, neither small nor large doses effect this change in many cases so readily and easily as might have been expected. Sir Henry Thompson says,[3] "By giving alkalies you can make the urine neutral or alkaline to any extent you please." In that case either my observations or his must be at fault. The following short cases will, I hope, tend to substantiate all I have stated.

Thomas R—— took ℥ j. of sulph. of soda daily in barley-water. The first morning the urine was acid, the scalding gone; but, on careful examination, it was found to have been nearly gone the day preceding, and it returned again. Thomas J—— took ℥ j. of sulph. of soda. Sixteen hours after the urine was found alkaline, the scalding had gone; its disappearance was traced to the use of a warm bath. The day after this it had returned, and a warm bath again relieved it. George P—— took ʒ j. of carb. of soda and ℥ j. of phosphate of soda in barley-water. He did not experience much benefit, the scalding having, in fact, gone from taking a warm bath. Eighteen hours after the urine was acid, and, on standing, deposited a thick flour-like sediment; the scalding returned. Charles H—— took ℥ j. of the phosphate of soda in barley-water. Next morning the scalding was worse; the urine not examined. George T—— took ʒ j. of nitrate of potass and ℈ ss. of pulv. ipecac. c. in barley-water. Next day the urine was neutral, and the scalding not so severe; he repeated the dose, and the day after the urine was strongly acid, and the scalding as severe as ever. Henry B—— had had scalding for fourteen days. By taking ℥ ivss. of nitrate of potass and ʒ iss. of pulv. antim., in eight days he was relieved, the disease having given way at the same time. James B—— took, in thirty-one days, ℥ iss. of carb. of soda and ℥ j. of pulv. jalap, in small doses three times a day; the scalding gradually diminished, the disease going at the same time. During the first fourteen

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[1] Lancet, vol. i., p. 90. 1860.

[2] Handwörterbuch der Physiologie, B. ii., Art. Harn. 1842–49.

[3] Diseases of the Urinary Organs, p. 200. 1873.

days he had no diminution of the scalding. Thomas R——, took ℥ j. of nitrate of potass and gr. xxiv. of pulv. antim. in six days. The scalding, which was going away, diminished under the use of this remedy. Henry H—— had acid urine and scalding. To take liquor potassæ ʒ ss. ter die. Four days after the urine was acid; scalding still continued. To take the dilute nitric acid in decoct. of pareira brava. Ten days after this the scalding was gone, the urine still acid. Samuel E——, while taking liquor potass., was suddenly attacked by scalding; urine acid, sp. gr. 1028. J. H. W—— had scalding from gonorrhœa. To take a scruple of nitrate of potass and ʒ ss. of gum Arabic thrice a day, with Dover's powder every night, and injections thrice a day. Four days later the scalding was much relieved, and in a few days disappeared. Thomas R—— had had scalding from gonorrhœa two months. To take carbonate of soda, gr. viij., and opium gr. ¼ twice a day. Two days after he reported that the bowels were confined; scalding much the same. Carb. of soda, gr. xij. and pulv. jalap, gr. xij. twice a day; injection three times a day. Six days after this was reported relieved; to go on. Again two days later the scalding had disappeared. Here the alkali was clearly of some use, as he had been using the same injection for two months, with mild aperients.

Two patients, with a slight discharge of long standing and some scalding, were put, one on the soda and opium powder, the other on the soda and jalap. At the end of nine days they were examined again, having in that time taken each ℥ ss. of the alkali. The patient who had taken opium and soda had lost the scalding, and with it the discharge. In the other, who had, however, taken some beer, it continued unabated. Charles C—— had had scalding from gonorrhœa in a very severe form for some days. He was ordered a mild saline purgative, his bowels being confined, and to be injected three times a day. The scalding disappeared in a few days, and did not return. G. W—— had very severe scalding from gonorrhœa. He took one drachm of soda in water, and was injected. When seen the following morning the scalding had diminished, and the urine was alkaline. On the evening of the same day he took a drachm of the carbonate and was again injected. One day later the urine was reported acid; the scalding had diminished. Joseph M—— had scalding, for which he was ordered a combination of soda with jalap powder. After thirty-five days' continuance of this, in the course of which time he had taken four ounces and a half of carbonate of soda, the scalding was still present, though slight. Charles L—— had been for some days using nitrate of potass for gonorrhœa and scalding. To take carbonate of soda, ten grains three times a day. He was also injected. Three days after the scalding was better, the urine natural. To go on. Two days after this the scalding lessened, the urine neutral. To continue the alkali and injection. The next day, urine acid, the scalding giving way; the dis-

charge diminished to a gleet. Inject again and continue the soda. The day after it was found that he had caught a cold; the scalding had returned as bad as ever.

I could fill pages with such notes, but it seems needless to pursue the point farther. It appears to me that enough has been said to show that none of these substances can really be depended on for the removal of the scalding. I will only stop to add that benzoic acid was tried, with a view of converting the uric into hippuric acid, and that, like the rest, it had no material effect. In all these cases the urine selected for examination was either that passed on rising, or the first voided after breakfast; most usually the latter.

It was while examining these points that I remarked that those patients who took a warm bath every day, a remedy in which I have great faith as a source of comfort, suffered much less from scalding than those who did not use it. Struck by the fact, I followed it up, and subsequently examined with great care the effects of abstinence, water-drinking, etc., on the urine. The observations made were far too extensive for insertion here, and therefore I only give the results in as compressed a form as possible. They were :—

1. That the action of the warm bath proved much more potent than that of any other remedy, therapeutic or hygienic, but that it only lasted an indefinite time.

2. That it was powerfully seconded by great moderation in the use of meat and a proper kind of diet, and that the best palliatives for scalding are water and mild diuretics, such as tea.

Probable Explanation ; Proposed Plan of Treatment.—What then can we glean from these disjointed observations? Simply, I fear, the conviction that empirical practice must guide us till chemistry has made farther progress ; and on this assumption I shall conclude by stating what deductions I think may be drawn from the materials brought together.

1. We have good reason to suppose that in gonorrhœa there is augmented action and more rapid development of urethral epithelium ; that this augmented action (or inflammation) soon casts off the flattened scales which form the outer surface of the epithelial covering in a state of health, and exposes the yet tender and unflattened cells, gifted perhaps with a much greater power of endosmosis than those which are firm and compressed, to the action of the urine. This is very probably the reason why the canal is so swollen in severe gonorrhœa ; and it may happen that when a block of such cells is suddenly detached, a sore place ensues in the membrane, or the unsupported vessels give way and bleeding ensues.

2. That the scalding is owing, not so much to the action of the acids of the urine or their salts on the abnormally tender membrane, as to this abnormal state itself.

3. That the ardor urinæ is possibly, so far as it is dependent on the presence of an acid at all, due to the phosphate of soda acid, though it may in some cases and to some extent be aggravated by the presence of lithic acid, as an excess of this salt will, in certain disorders, such as cold, influenza, rheumatism, and gout, of itself induce scalding.

4. That the best remedy for scalding is the free use of the hot bath, and hot bathing to the penis and bladder; moderate abstinence, and the use of no drink but water, tea, and very mild diuretics; while at the same time we must steadily act upon the disease, and look chiefly for success to subduing it.

2. Chordee.—*Pathology.*—Chordee is the first link in that chain of sympathetic irritations set up by gonorrhœa, which from their resemblance to inflammatory phenomena have been treated antiphlogistically by many practitioners—I allude to swelled testicle, irritable bladder, etc. Probably the affections of the gland, denominated sympathetic bubo, mumps, and gonorrhœal rheumatism, the two former of which bear a strong resemblance to orchitis, are closely allied but more distant phases of this chain of actions. Violent pain, spasm, indeed *all the symptoms of the first phase of inflammation, unable to pass into the suppurative stage,* are characteristic marks of these affections; the analogues, perhaps, of the cough and soreness which attend the acme and decay of some disorders of the mucous membranes, such as cold and influenza.

Chordee has been divided by common consent into inflammatory and spasmodic; but while the origin of the latter has been silently conceded to muscular contraction or orgasm of the erectile tissue, that of the former has been rather freely contested.

Hunter says:—"When the inflammation is not confined merely to the surface of the urethra and its glands, but goes deeper, and attacks the reticular membrane, it produces in it extravasation of coagulable lymph as in the adhesive inflammation, which, uniting the cells together, destroys the power of distention of the corpus spongiosum urethræ, and makes it unequal in this respect to the corpora cavernosa penis, and therefore a curve on that side takes place in the time of erection." This view has been silently accepted by Durkee and others. Sir Charles Bell, who with all his ability is scarcely to be trusted when on ground previously occupied by Hunter, limits the action to "the membrane of the urethra," which is "inflamed, and has lost its elasticity; being powerfully stretched it cracks," an event followed by bleeding. To this M. Robert adds that the glands of the urethra are inflamed. Mr. Wallace, however, says that it is the spongy body which loses "its extensibility, and that the corpora cavernosa are not affected in this way, the proof being that the curve takes place in the direction in which the want of extensibility of the corpus spongiosum would act on the corpora cavernosa." Mr. Berkeley Hill thinks the cavernous and spongy bodies are imperfectly distended, while according to

Messrs. Handfield Jones and Sieveking,[1] when the inflammation extends to the fibrous structure of the corpus spongiosum, exudation of fibrine sometimes takes place in the venous sinuses, thus occasioning bending of the penis toward the affected part.

However ingenious and philosophical these explanations, and many others which I have omitted for want of space, may be, it is manifest that most of them must be wrong, for they are in flat contradiction to each other; while there is not one of them which can be looked upon as proven; in support of which assertion I would ask—

1. Is there on record a single case in which it was shown, on post-mortem examination, that the corpus spongiosum was in the state supposed—that is, containing effused lymph?

2. Is there one which proves that this took place without effusion into the upper surface of the urethra, or the corpora cavernosa penis?

3. If Sir Charles Bell's explanation be admitted, how comes it that we can bend the glans penis downward, and thus relieve the chordee? If the mucous membrane had lost its elasticity, so that it could not be inclined upward without pain, how could it be thus bent, not merely without inducing suffering but with positive relief to it?

4. Is not the cause of the erection itself a disputed point?

5. And finally, is it not the case that, when adhesive inflammation attacks the corpus spongiosum, very intractable and totally different symptoms and results, such as abscesses opening into the urethra and permanent adhesions, are met with?

The grounds I urged years ago for refusing to accept the commonly received explanations have, to my judgment, only gained strength with time. Admitting any one of these reasons to be true—admitting that the under part of the urethra has lost its elasticity, that lymph is effused into the corpus spongiosum, and not into the corpora cavernosa, so as to chain down the urethra—this would only prevent the extension of the penis. In ordinary erection, that part of the urethra which is the seat of chordee is carried upward nearly unaltered in direction, the greatest curvature taking place beyond the specific seat of gonorrhœa. Mere effusion of lymph could not bend the urethra. Besides, supposing such effusion to have really taken place, how is it possible that both the bending, and the pain which it occasions, are so quickly relieved by the application of scalding hot water? I might well ask, whether pathology can show another such instance of a sudden change in a part affected with adhesive inflammation. Moreover, I have never been able by manipulation to detect the effusion of lymph in the living subject. The only alteration I have ever remarked was a certain hardness in the middle portion of the urethra; but this was toward the close of the complaint, and *more likely to be a consequence than*

[1] Op. citat., p. 711.

a cause of chordee. Indeed, I feel sure that, without some strange neglect on the part either of the patient or surgeon, adhesive or suppurative inflammation of the spongy body could hardly take place. On the other hand, there are certain facts which suggest the idea of its being due to muscular action. The first is, that the erection of the penis is designed for the emission of semen, and is, therefore, one stage in an act of the animal economy, obviously performed by the mixed agency of voluntary and organic muscles. The second, that painful erections, which are but one step removed from spasmodic chordee, can scarcely be caused by anything but the cause of healthy erections. The third, that even the supporters of inflammatory chordee admit that there is a spasmodic chordee. The fourth, that the form which the penis assumes in chordee is much more like that which it would take on if the urethra were acted upon by longitudinal muscular fibres seated on its under surface, than that resulting from a solid deposit of lymph, which could scarcely be always so regularly effused as to give the penis the same form in every case. The fifth, that the observations made by Mr. Bauer and Sir Everard Home,[1] the investigations of M. Kölliker and others, and the discovery by Mr. Hancock of the prolongation of the muscular coat of the bladder over the urethra, prove, as far as such facts can, that this canal may be acted upon by spasm, and the so-called specific seat of gonorrhœa is certainly comprised within the region in which this spasm might ensue.

Dissection of the penis reveals, in connection with this part, a cellular layer uniting the corpus spongiosum to the corpora cavernosa above and the skin below. The corpus spongiosum, which appears thicker along the under than on the upper surface of the urethra, is invested by its own fibrous sheath and invests the urethra. It contains fibres which, when examined under the microscope, have a strong resemblance to those of inorganic muscle, and differ widely from those of the fibrous sheath of the corpus cavernosum; these fibres grow fewer and less characteristically marked as the corpus spongiosum expands to form the glans penis. I am not sufficiently versed in the use of the microscope to say with certainty whether they are muscular or not; but Mr. S. F. Lane, who kindly assisted me in these investigations, and who was quite competent to form an opinion, thought they bore a strong resemblance to muscular fibre. Even if no such reasons as these existed, the fact previously mentioned, of the urethra easily expelling a long strip of calico, shows that it possesses a muscular power, if not furnished with muscular fibre, which is most assuredly not absolutely necessary for such actions, as the anatomy of the smaller animals might show.

The sixth reason is, that several concomitant and similar complications of gonorrhœa, such as irritability of the bladder, swelled testicle, abscess

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[1] Practical Observations on Stricture, vol. iii., p. 28. 1821.

of the perineum, and sympathetic bubo, which are so closely connected with chordee, are clearly, at all events in the early stages, much more like spasmodic action than inflammation. Irritability of the bladder is spasm, as evidently as anything can be; swelled testicle never reaches the suppurative stage; for though now and then abscess may follow orchitis, yet it is quite a different affair from pure suppurative inflammation, and is probably induced, like the swelling in sympathetic bubo, by the secretion of the gland, locked up by spasm of the efferent duct, acting in an unhealthy constitution like a foreign body.

It is only right to add that the arguments just employed are rejected by Dr. Bumstead. He says, "Milton's explanation is opposed by the fact that bending the penis so as to increase the curve of the arc affords partial ease to the pain of the chordee, and I am not convinced that the generally received opinion should thus be laid aside, though it is highly probable that spasmodic muscular action plays some part in the production of the frequent erections and chordee which take place in gonorrhœa."

Prognosis.—Favorable when the affection is promptly met; but if treated lightly or left to nature, and so allowed to get hold of the structures, it may prove very troublesome, as will be seen by what follows.

Results.—I have seen mismanaged chordee followed by very disagreeable and protracted pain on erection, continuing long after the gonorrhœa had disappeared. One patient, a medical man, suffered in this way for quite six or seven years. He had done nothing beyond taking a few copaiba capsules for his complaint. But much worse after-effects have been seen. Death occurred in the practice of M. Villeneuve.[1] The patient was suffering from intense chordee and continual erection, to relieve which twenty leeches were applied. Two days after a scab formed on the most prominent part of the curve; when it fell off the cavernous bodies were exposed for a length of three or four centimetres. Rigors, pains in the joints of the upper limbs, purulent effusion into the left elbow-joint, and delirium followed, with arterial hemorrhage from the slough on the penis which carried the patient off. Phlebitis of the prostatic plexus, metastatic abscess in the left lung and liver, and effusion of matter into the elbow-joint were found after death. M. Dron[2] had a case where the patient was in the habit of injecting himself for a gonorrhœa, having done so for two years, without however laying any restrictions upon his habits. Under this management the urethra had become tense during erection, constituting indeed the string of a bow, the curve of which was formed by the dorsal side of the penis. Rupture of this took place during connection, and a very considerable quantity of blood passed by the urethra. Very shortly after the scrotum began to swell, and the patient could pass only a small quantity of water. When M. Dron saw him the scrotum was as

[1] Gazette Hebdomadaire, p. 210. 1873.

[2] Lyon Médical. Quoted in Gazette des Hôpitaux, p. 950. 1877.

large as the head of a child three months old, tense, and of a violet color. The tumefaction ascended toward the groin, and reached the abdominal walls. The patient was much prostrated. The pulse was small, rigors were present, and a smell of urine was exhaled from the body. The scrotum was laid open, and a large quantity of bloody serum let out, but gangrene of a large portion of the scrotum took place, laying bare the testicles; abscess was set up in the left groin, and a fistulous opening formed in the urethra about three inches (eight centimetres) from the orifice. When this closed, contraction ensued at the spot, which required internal urethrotomy.

Treatment usually adopted.—To judge by modern practice, the faith of medical men in their own pathology seems to be at something like zero; for to meet inflammatory conditions of various tissues and deposit of lymph with antispasmodics and sedatives argues, to my thinking, great want of confidence indeed. Yet this is the treatment which is now almost universally recommended. M. Ricord prescribes gr. ijss. of camphor, and gr. ss. of opium, in a pill, of which two or three may be taken every night. He also suggests the employment of the extract of lettuce in doses of eight to twelve grains with an equal weight of camphor. But the bulk is objectionable; these quantities make from four to six large pills, or else a bolus, and most persons dislike such large doses of solids. Mr. Johnson says, "opium, in some form, can rarely be dispensed with;" he thinks the "Dover's powder is as good a preparation as any," and "was never thoroughly convinced that the camphor had much to do with any benefits obtained." Dr. Bumstead gave lupulin and camphor. Durkee strongly recommended lupulin; he considered it far preferable to camphor, as it does not disagree with the stomach. Against the agreeable qualities of lupulin must be set its inferior power, even when prepared from the best golden hops and by a careful chemist. Mr. Berkeley Hill tells us,[1] that strychnine, recommended for this sympton by Mr. Henry Lee, sometimes acts very beneficially and in other cases fails entirely. Mr. Lee, however, does not mention strychnia in his article on gonorrhœa in "Holmes' System of Surgery." He recommends camphor, and bathing with hot water to faintness before going to bed; but considers that, perhaps, the most efficacious remedy is a suppository containing a grain of opium and three of camphor. Dr. Parona seems[2] to have had great success in removing chordee, sensibility of the urethra, scalding and weight in the perineum, by means of daily injections of hydrate of chloral, one to one and a half per cent. of the salt in water; and M. Cambillard equally great with injections of bromide of potassium, 6 gr. to 150 of water and 10 of glycerine.[3]

[1] Op. citat., p. 394. [2] Giorn. Italiano, an. viii., p. 279. 1873.

[3] Journal de Thérapeutique, October 25, 1881. Quoted in Glasgow Medical Journal, p. 72. 1882.

Proposed Plan of Treatment.—The possibility of allaying chordee merely by the use of antispasmodics does not seem to have been entertained before the first edition of this work appeared. It is, however, precisely this part of the subject which has most of all occupied my attention ; and I trust I have substituted a simple remedy for complicated methods. Sedatives are objectionable unless there be pain in the testicle or perineum, as they disorder the stomach and produce headache and languor, with constipation of the bowels, a state of matters often followed by exacerbation of the disorder ; while the chordee is not so speedily checked as by a remedy which acts on the spasm, and often returns as soon as sedatives are no longer given.

After having tried almost every antispasmodic, including ether, chloroform, and sumbul, I can safely say that I have found nothing equal to camphor in the fluid form, as recommended by me in the first edition of this work. In the solid state it does not act so rapidly; and, in fact, a remedy in a liquid form—as it must from its extremely fine state of division act more rapidly—is more suited for spasm. The spirit of camphor offers all the advantages sought for, and given in drachm doses is equally energetic and rapid in its action. The essence of camphor, prepared by Messrs. Slinger & Barnet, of York, which is perfectly miscible with water, is a much more agreeable medicine, but more expensive and weaker. What is now made by chemists, under this name, seems to possess no particular advantage over the spirit.

Chordee cannot be cured too quickly, and Boerhaave showed what a sound physician he was when he said that he who was most successful in preventing priapism will be most successful in the cure of the disease. As in many other cases, the chain of morbid action should be broken at once, and this is much more effectually done by giving two or three full doses, at short intervals without the least remission, than by small quantities, however long continued and regularly taken. The surgeon may therefore safely adopt the following plan: Half a teaspoonful to a teaspoonful of the spirit is to be taken at night in water before going to bed, and every time the patient wakes with the chordee, let him at once rise and repeat the dose. In mild cases, one dose for a night or two is generally enough ; and even in more severe cases the spasm is usually very much alleviated by the third or fourth night. So long as the chordee remains very bad, which will not often be more than five or six nights if the patient be reasonably attentive, he may take a dose before going to bed. This remedy also answers well in the bearing-down pains to which women are sometimes subject in gonorrhœa, but as these pains are generally worst in the daytime, the medicine may be given then ; and here it is really a matter of convenience to use the York essence of camphor, as it mixes well with any medicine they may happen to be taking.

In both cases, however, it must be given in full doses. A smaller quan-

tity than half a teaspoonful of either the ordinary essence or spirit is of little service; generally a teaspoonful is required, and as this quantity is perfectly safe, it is best to insure success at once. In a few instances it has produced slight sickness. This, however, has not occurred very often, and the sickness was of little moment, so that I only allude to the fact, lest any one might be discouraged by the appearance of this symptom from administering so valuable a remedy. The patient should be directed to keep the camphor in a tightly corked bottle, and to have it at night by his bedside ready to take. It can be taken in water; the sweetened milk, however, recommended by Dr. Durkee, is really an excellent vehicle, and one which is, owing to the general introduction of tinned milk, easily accessible. The old essence requires no addition beyond water.

I believe few who have given camphor in this form a fair trial have come to a different conclusion from myself. Irrespective of communications I have received on the subject, I know from the prescriptions I have seen that it is now constantly used by many surgeons. Dr. Bumstead[1] and Mr. Henry Lee[2] distinctly testify to its value. As to the objection raised by the late Mr. Weeden Cooke, that both opium and camphor disturb the brain and stomach, it does not here, as a rule, affect the giving of the latter. The disturbing influence of opium I am quite prepared to admit, but, generally speaking, camphor is pretty well borne for the short time required to subdue chordee, and even for the much longer period during which spermatorrhœa patients have to take it. No doubt, as has just been said, some persons do not support it well, but they are, even if numerous, exceptions, whereas opium in full doses generally disagrees here. In orchitis, on the other hand, it has usually appeared to me that at the first outset we could hardly give too much opium. The pain of chordee seems dependent on a kind of spasm, a state often not acted on by sedatives; in orchitis the nature of this symptom more nearly approaches that of true inflammation, on which opiates sometimes act very beneficially. When camphor does disagree it generally brings on a feeling of heat in the throat and stomach, with sickness.

Bromide of potassium seems to have been very serviceable in the hands of some observers,[3] especially in obstinate priapism following gonorrhœa. Dr. Soresina gave it with great success in a case[4] which had resisted every remedy for eight months. I have not tried it in this form, but from what I observed of its action in chordee, I should not feel inclined to prefer it to camphor. Occasionally, when the patient has not liked camphor alone, I have prescribed, with success, a draught with fifteen to twenty grains of bromide of potassium, five grains of hydrate of chloral, and two drachms of brandy,

[1] New York Journal of Medicine, vol. ii., p. 223. 1859.

[2] Holmes' System of Surgery, second edition, vol. v., p. 208.

[3] Practitioner, vol. xii., p. 103.

[4] Appendice sifilitica della Gazett. Med. Lombard. Ago., 1862.

with a little essence of camphor in strong peppermint water. The bleeding which results from mismanaged chordee scarcely ever requires any internal treatment, nothing being needed beyond exposure of the parts to the open air.

3. Sympathetic Bubo.—It is not necessary to dwell on this symptom, which rarely attains such severity as to justify any interruption in the treatment. Hot bathing will generally relieve it so quickly, that the surgeon need scarcely trouble himself to prescribe any local remedies. I therefore leave it to pass to another more severe complication.

4. Irritable Bladder.—I am afraid of being charged with exaggeration for saying, that if the treatment recommended for gonorrhœa in the earlier part of this work be enforced, irritable bladder will rarely, if ever, occur to such an extent as to cause the patient any material inconvenience. Such, however, is the fact.

But it frequently happens that we do not see the patient till this complication has set in, and then the surgeon will often exhaust all his resources in vain, while on the other hand he *may* relieve the patient with the first remedy he selects. I have experimented with every form of sedative and antispasmodic, including hydrocyanic acid, valerian, steel, bismuth, sumbul, and galbanum, without finding any remedy upon which I could rely, so that I have been compelled to return to the preparations of opium; not that they are certain remedies, but that, *cæteris paribus*, they are the best. I think they are best given by the mouth. I tried opium suppositories, but the results were not encouraging; those of morphia and atropine, gr. $\frac{1}{4}$ and gr. $\frac{1}{30}$, mixed, are said to act admirably. Antiphlogistics, leeching included, have always in my experience proved useless, even when the irritation had developed into a certain degree of cystitis.

In the irritable bladder which results from extension of the inflammation of gonorrhœa Sir Henry Thompson advises[1] the use of the triticum repens or couch grass, as superior in certain cases even to the buchu. It is given in the form of infusion, an ounce of the underground stem to a pint of boiling water; he advises that the stem should be gathered in spring before the leaves appear, and dried slowly without heat. It is mild, and by no means unpleasant, so that a pint of the infusion may be given in the course of the day. Sir Henry now says[2] that the remedy still maintains its credit. Mr. John Simon, in sympathetic irritation of the bladder, that is where the inflammation has not travelled so far as the viscus, recommends[3] a bougie, "smeared with nitrate of silver," to be applied to the first two or three inches of the urethra. In the other form relief, he tells us, is given by the hip-bath, recumbent position, and opiate clysters. Mr. Teevan considers that in all cases of irritable bladder there is incipient

[1] Lancet, vol. ii., p. 345. 1861.

[2] Clinical Lectures on Diseases of the Urinary Organs, p. 199.

[3] Lancet, vol. i., p. 289. 1850.

stricture, but the way in which I would put the proposition is this, that when the gonorrhœal inflammation extends backward with severity enough to set up stricture, it often enough spreads as far as the neck of the bladder and makes this organ irritable. I am sure that the incipient stage, spoken of by Mr. Teevan, very often comes to nothing, for I have, months and even years after, passed the bougie and found the passage quite free.

5. Orchitis.—*Pathology.*—This affection has been supposed to arise from metastasis,[1] erratic disposition of the gonorrhœal inflammation, sympathy, and continuous spreading of the disease along the urethra. Nearly all modern authors admit the two last varieties. But the doctrine of sympathy rests on mere conviction ; it is unsupported by either analogy or proof. Moreover, we do not see anything of the kind in other affections of the mucous membranes. Even those who admit this view are obliged to confess that *sometimes* the inflammation spreads along the urethra ; a surmise proved by the cases which Cooper, Ricord, Gay, and others have placed upon record. But several symptoms concur to make it almost certain that this is always the fact. Tenderness at different parts of the urethra, as far back as the prostate, is constantly being detected in such cases. Pain in the perineum and tenderness in the vas deferens very frequently, spasmodic stricture and great irritability of the bladder not unfrequently, precede swelling of the testicle, and orchitis often follows from irritation of these parts, as when it occurs from stricture or stone. No doubt at the beginning, and in mild cases, the first inch and a half may be looked upon as the seat of gonorrhœal inflammation, or rather the part to which it is mainly confined ; but later on and in irritable constitutions, the circumstances under which we encounter orchitis, the case is very different.

It is not at all uncommon for gonorrhœa, even in cases unaccompanied by orchitis, to extend at least five or six inches down the urethra, and even quite to the bladder. It is true that the history of the case may reveal nothing which points to this conclusion ; sensation is often so dull in the posterior portion of the spongy part that in many persons, after a bougie has passed the first two inches or so, they cannot tell within an inch where the point is ; but a very simple experiment will often show, that though the sensation may reveal nothing, the inflammation has reached as far as I have said. The surgeon has only, in a few bad cases of obstinate gonorrhœa or gleet, to syringe out the urethra with cold water up to the posterior end of the so-called specific seat of the disease, and then direct the patient to make water ; in a certain proportion of these cases a shred or two of muco-pus will be expelled with the urine. Again, if a bougie be passed down the urethra for two or three inches, withdrawn, wiped clean, and passed down to the membranous or prostatic portion of the urethra, a shred or two of the kind spoken of will often be found adhering to it when

[1] Brodie : Works, vol. ii., p. 262.

withdrawn the second time. In obstinate gleet the bougie, when passing over the posterior portion of the urethra often encounters tender spots; with the removal of this tenderness the gleet ceases. Injecting over the posterior part of the urethra will often cure gleets which injections of every kind, applied only to the anterior part of the same canal, have totally failed to touch.

In short, we see in all the phenomena of orchitis the disease passing along continuous and through contiguous structures, just as in other parts; nothing which tells us that the two extreme points of the membrane are inflamed, and the tract between them sound. The probability is that the sympathetic variety described by Ricord, Curling, Egan, and others, is simply a *mild* form of extension of the inflammation; those parts which intervene being, from their low organization, incapable of active disease of this kind; it being well known to surgeons that the portion of the urethra between the specific seat of gonorrhœa and the membranous tract is much less sensitive than these regions.

The older surgeons knew this as well as modern writers. Indeed Sir Astley Cooper described [1] orchitis as beginning with irritation of the membranous or prostatic portion of the canal, and tenderness of the spermatic cord. Mr. Hunter alludes to similar facts. Swediaur maintained [2] that orchitis was due to the "poison" reaching the mouths of the "excretory ducts," and Bell and Civiale pointed out the affection of the cord. Johnson gives an analysis of fifty-nine cases, in twelve of which the symptoms of urethritis were entirely gone before the orchitis came on; so that in one-fifth of the entire number there was no sympathy, and the evidence of MM. Castelnau and Aubry is to the effect that this complication may appear from five days to three months after the cessation of the discharge.

Inflammation of the testicle rarely occurs in the first week or two of gonorrhœa, when these symptoms are most severe and most likely to occasion sympathy, while it never ensues till a sufficient interval has elapsed to allow of such an active disorder spreading backward over so short a space. To call attention so often to this may seem needless repetition, but where a widespread, and what is thought to be a wrong, belief exists, the question is, not what is the most scientific, but what is the most effectual, mode of dealing with it. Dr. Bumstead says most authorities admit that swelled testicle may be excited through sympathy alone, and that the subsidence of the swelling in one testicle and its subsequent appearance in the other, as occasionally happens, render this view probable. It is not often that I find myself in direct opposition to this careful observer, but I do here. My reply is, firstly, that authorities are often wrong, and secondly, that inflammation may clearly reach both testicles by the same road as it reaches one.

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[1] On the Structure and Diseases of the Testis, part ii., p. 8.

[2] Op. citat., p. 73.

Balanitis is said by Ricord never to give rise to orchitis. I have seen one instance of it from this source; the patient, however, admitted that he had practised masturbation. The case was a very bad one; the prepuce was of a violet color, and so swollen that an accurate examination could not be made. The patient wore a most unhealthy appearance. In forty-eight hours after commencing attendance for balanitis, swelled testicle came on; no trace of gonorrhœa was detected during the time I saw him.

While in this affection we have every sign of active inflammation, pain, heat, redness, etc., it has been doubted by some authors whether the testicle is really inflamed. The epididymis is to be considered the head-quarters of the disease, which is to be named accordingly; and we are to look upon the affection of the testicle as a mere subordinate affair, for no other reason, that I can learn, than because the pain and swelling begin at the epididymis. But this seems simply due to the inflammation having in its progress again reached a susceptible point. From the tone in which this doctrine is urged by some writers, it might be looked upon as a modern discovery. It was, however, upheld by Swediaur,[1] at any rate as regards the outset of the complaint, and where it had not been improperly treated; while Howard contested it,[2] and Hunter refuted it[3] long ago. M. Salleron, in a thoroughly practical memoir on orchitis,[4] strongly opposes M. Ricord's doctrine of the inflammation being forty-nine times out of fifty limited to the epididymis, and states, emphatically, that he has very rarely seen it thus restricted; besides, it seems to me that the relief afforded in many cases by puncture of the body of the testicle, and by the application of ether and ammonia to this part, is of itself enough to show that there must have been some error in M. Ricord's observations. It is certainly quite probable that the epididymis is the part most severely affected, and that the body of the testicle is not often highly inflamed; but the extreme tenderness of the gland, the great prostration, and other symptoms, render it, I think, almost certain that, in every severe case, the whole organ is invaded, and that it seldom escapes in the mildest.

M. Gosselin considers[5] that in most cases of epididymis the vaginal tunic is also inflamed. We may, I think, assume that such is the case, when we observe how distinctly the scrotum is affected in this way and how irritable the dartos is; but I am not at all disposed to view them as independent affections. They seem to me purely secondary, the parts being sucked into the vortex of the inflammation by sympathy of contiguity. M. Rochoux, reporting[6] on a paper on this subject by M. Ricord, maintains that, a small portion of the tumor excepted, which belongs to

[1] Op. citat., p. 74. [2] Op. citat., vol. i., p. 215. [3] Op. citat., p. 55.

[4] Archives Générales de Médecine, tome i., p. 174. 1870.

[5] Gazette des Hôpitaux, p. 434. 1873.

[6] Bulletin de l'Académie de Médecine, vol. ii., p. 506. 1838.

the epididymis, the swelling is entirely formed by effusion into the tunica vaginalis. But this could not be effusion in the ordinary sense of the term, for the enlargement sometimes disappears more rapidly than serum is ever absorbed ; and the covering itself has been repeatedly pierced without yielding more than a few drops of fluid.

Perhaps no man has examined the subject so fully as M. Castelnau.[1] According to him the post-mortem appearances found by Gaussail in the first of three cases were, vas deferens augmented in size throughout, its capacity diminished and obstructed by yellowish white matter ; little vessels ramified on its walls more red than usual. Epididymis voluminous, of a red hue like wine lees ; in its centre a deposit of matter like that in the deferent canal. The testicle only displayed marked injection of the vessels ramified through its thickness. The vaginal tunic contained a little reddish serum. In the two other cases the appearances were much the same, except that those in the testicles were more pronounced ; while Castelnau, in a case which he examined, found[2] the vas deferens moderately swollen, but only for the length of an inch and a half from its inferior extremity ; the epididymis about double its normal size, hard and reddish; the vessels of the testicle very much injected, while the gland contained in its interior three small masses of unorganized matter, less consistent and more moist and translucent than tubercle.

Causes.—With respect to the action of injections in producing orchitis, I must refer the reader to the section on injections. As to the influence of specifics, I can scarcely be expected to give an unprejudiced opinion, as I use these medicines so little. I must leave the task to others, and the sooner some one undertakes it the better. Mr. Johnson blames cubebs, copaiba, and injections indiscriminately. Mr. Curling defends the two former, and grants the demerits of injections used improperly. Broughton defends cubebs ; Sir B. Brodie, cubebs and injections. Swediaur admits irritating and astringent injections as causes ; Wallace and Robert take up the cudgels in favor of all the three ; Hunter and Sir Astley Cooper thought irritating injections might induce swelled testicle ; Egan admits the injudicious, but not the judicious, use of injections as the *origo mali*. Dr. Frazer, a most careful observer, says he has never seen any reason to connect the occurrence of orchitis with injections ; Dr. Durkee thinks[3] strong injections frequently produce orchitis, but that those of moderate strength do not. Ricord, taking his stand on statistics, declares that he found only one orchitic patient in twenty had been taking gonorrhœal remedies ; M. le Fort, analyzing an enormous number of cases, denies, as I understand him, the influence of treatment, especially in respect to injections. Now if any person can draw a conclusion from this

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[1] Annales des Maladies de la Peau, p. 193. 1844.
[2] Op. citat., p. 194. [3] Op. citat., p. 83.

mass of contradictions, I should be glad to know what solution of the difficulty he has to offer.

The influence of cold, wet weather has also been advanced as a cause of orchitis.[1] Being anxious to investigate the point, and considering that the experience of one person could not suffice to determine it, I examined the entries in the casualty and out-patients' books in three hospitals,[2] two of which are among the largest in London. The years 1852 and 1853 were selected, simply because they coincided with the period at which some other observations were made. The number of cases obtained will, it is hoped, be large enough to prevent the deductions being vitiated by accidental causes. Some of them are necessarily imperfect, and occasionally entries were met with which rendered it doubtful if they referred to cases of genuine orchitis, but in our present state of knowledge the same objections might be raised against all statistics of this kind.

In making these researches I was most kindly and courteously assisted by the authorities, to whom I applied for leave to search the case-books, etc., as well as by the assistant-surgeons and house-surgeons; indeed, without their aid I could not possibly have drawn up these tables. Dr. Farr, too, very courteously gave me every facility for searching the returns of the Registrar-General preserved at Somerset House.

The returns in the third, fourth, and fifth columns, it will be observed, contain the numbers of cases of orchitis occurring at each hospital; that in the sixth column, the total in all the hospitals for the week. The reason for arranging the number of cases according to the weeks, and for beginning with the 4th of January instead of the 1st, is, that the hospital returns might tally with those of the Registrar-General.

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[1] Acton: Op. citat., p. 198. Ridge: Medical Times and Gazette, vol. ii., p. 274. 1871.

[2] St. Bartholomew's, St. Thomas's, and the Metropolitan Free.

TABLE IX.

Statistics of Orchitis.

1852. Week ending	Date.	St. Bartholomew's Hospital.	St. Thomas's Hospital.	Metropolitan Free Hospital.	Total Number.	Mean highest Temperature in the Week.	Mean lowest Temperature in the Week.	General Direction of Wind.	Sum of Rainfall in inches.
Jan. 10 ...	4	2	...	...	8	46·0	34·7	S.W.	0·12
	5	...	1	...					
	8	...	1	...					
	9	2	...	...					
	10	...	...	2					
Jan. 17 ...	12	2	1	...	8	51·8	41·5	S.W.	1·76
	13	1	...	...					
	14	...	2	1					
	15	1	...	...					
Jan. 24 ...	21	1	...	...	1	45·2	35·9	S.W.	0·44
Jan. 31 ...	26	...	1	...	5	49·0	36·1	S.W.	0·54
	27	1	1	...					
	28	1	...	...					
	31	1	...	...					
Feb. 7 ...	2	2	...	...	5	53·2	41·9	W.S.W.	0·32
	3	1	...	...					
	5	...	...	1					
	7	...	1	...					
	9	3	...	1					
Feb. 14 ...	10	2	1	...	10	46·4	33·3	N. and S., S.E.	0·22
	12	2	...	...					
	13	...	1	...					
Feb. 21 ...	16	1	1	...	4	46·1	33·8	W. and N.	0·03
	19	...	2	...					
Feb. 28 ...	23	2	...	...	5	45·1	32·7	N.E.	0·16
	26	2	1	...					
March 6...	1	1	...	...	3	45·6	28·3	N. and E.	0·02
	3	...	1	...					
	6	1	...	...					
March 13	8	...	1	...	9	49·9	32·3	N.E.	0·00
	10	2	1	...					
	12	1	...	1					
	13	1	1	1					
March 20	16	1	...	...	4	48 7	33·2	N.E.	0·00
	17	3	...	...					
	18	...	..	...					
	20	...	...	...					
March 27	22	1	...	...	6	56·4	32·4	S.E. and N.E.	0·00
	23	..	1	...					
	24	1	1	...					
	25	1	...	...					
	26	1	...	...					

1852. Week ending	Date.	St. Bartholomew's Hospital.	St. Thomas's Hospital.	Metropolitan Free Hospital.	Total Number.	Mean highest Temperature in the Week.	Mean lowest Temperature in the Week.	General Direction of Wind.	Sum of Rainfall in inches.
April 3 ...	1	...	3	...	4	52·7	34·5	E. N., E.	0·12
	2	...	1	...					
April 10...	8	2	...	...	2	56·3	33·3	E. and N.E.	0·00
April 17...	12	3	...	1	5	60·0	33·4	E. and N.E.	0·00
	14	...	...	1					
April 24...	19	3	...	...	5	57·9	34·9	N.E. and E.	0·00
	21	...	1	...					
	23	1	...	...					
May 1 ...	26	2	...	...	3	60·8	38·0	(1)	0·52
	29	...	1	...					
May 8 ...	4	2	...	...	4	60·1	35·0	N.E. and S.W.	0·00
	6	...	1	...					
	8	1	...	...					
May 15 ...	11	...	1	...	2	63·6	45·7	S.W.	0·30
	13	...	1	...					
May 22 ...	16	...	1	...	7	66·3	47·3	(2)	0·84
	17	1	1	1					
	19	1	...	...					
	21	...	...	2					
	24	...	1	1					
May 29 ...	25	...	1	1	8	58·7	46·3	N.	0·87
	28	2	...	...					
	29	2	...	...					
	31	1	...	...					
June 5 ..	1	2	...	...	5	63·7	43·4	S.W. and S.	0·20
	5	1	...	1					
June 12 ...	7	1	...	...	1	62·8	49·6	S.E. and S.W.	2·63
June 19 ...	14	1	...	...	4	66·4	49·0	S.W. and S.S.E.	1·09
	15	...	1	...					
	17	...	...	1					
	19	1	...	...					
June 26 ...	21	1	1	...	4	69·5	50·4	S. and S.W.	0·54
	22	1	...	...					
	24	1	...	...					
July 3 ...	28	...	1	...	2	(3) 10·7	52·0	S.W.	0·09
	30	...	1	...					
July 10 ...	5	1	...	...	1	86·2	57·3	S.E.	0·00
July 19 ...	12	4	..	...	6	81·9	57·3	N.E.	0·27
	13	1	...	...					
	15	1	...	...					

(1) Generally calm; most prevalent direction E. and N.
(2) E. and N. prevailing.
(3) The correctness of these entries is doubtful.

1852. Week ending	Date.	St. Bartholomew's Hospital.	St. Thomas's Hospital.	Metropolitan Free Hospital.	Total Number.	Mean highest Temperature in the Week.	Mean lowest Temperature in the Week.	General Direction of Wind.	Sum of Rainfall in inches.
July 24 ...	19	...	1	...	2	79·3	54·7	(1)	0·01
	22	...	1	...					
July 31 ...	26	...	...	1	7	78·5	55·6	N.E. and N.	2·04
	27	3	...	...					
	29	2	...	...					
	31	1	...	...					
August 7	3	5	...	...	8	74·4	53·4	S.	1·01
	4	1	1	...					
	5	1	...	...					
August 14	9	1	...	...	4	70·2	52·7	S.W.	4·48
	10	1	...	...					
	11	1	...	1					
August 21	16	2	...	...	5	70·9	56·6	(2)	1·91
	18	1	...	...					
	19	1	1	...					
August 28	27	...	1	...	2	75·3	57·1	N., N.E., and S.W.	0·10
	28	1	...	...					
Sept. 4 ...	30	...	...	1	6	73·9	51·9	S.W. and S.E.	0·00
	31	1	...	...					
	2	1	...	...					
	3	2	1	...					
Sept. 11...	6	...	...	1	9	69·2	55·9	N.	1·40
	8	2	1	...					
	9	1	...	...					
	10	2	...	...					
	11	2	...	...					
Sept. 18...	14	1	...	...	3	64·5	45·8	(3)	0·85
	15	1	...	...					
	16	...	1	...					
Sept. 25...	20	...	1	...	4	64·0	46·5	S.W.	0·00
	23	1	1	...					
	24	1	...	...					
Oct. 2 ...	27	2	...	1	13	61·8	43·4	N.E. and S.W.	1·31
	29	1	...	...					
	30	3	...	(4)					
	1	1	...	...					
	2	4	1	...					
Oct. 9 ...	4	3	1	...	8	53·4	41·3	S.W. and N.W.	1·09
	5	2	...	...					
	6	2	...	...					

(1) Variable; S. and W. prevailing.
(2) Variable; much calm; N. and W. prevailing.
(3) Calm; W. prevailing.
(4) One of these is said to have occurred from stricture.

1852. Week ending	Date.	St. Bartholomew's Hospital.	St. Thomas's Hospital.	Metropolitan Free Hospital.	Total Number.	Mean highest Temperature in the Week.	Mean lowest Temperature in the Week.	General Direction of Wind.	Sum of Rainfall in inches.
Oct. 16 ...	11	1	...	...	4	55·7	41·2	N.E.	0·03
	12	1	...	...					
	15	.	1	...					
	16	1	...	...					
Oct. 23 ...	18	2	...	...	12	59·6	39·9	N.E. and S.W.	0·42
	19	1	...	...					
	20	1	...	...					
	21	4	...	...					
	22	2	...	1					
	23	1	...	...					
Oct. 30 ...	25	3	...	...	13	52·0	40·5	S.W. and N.W.	2·01
	26	2	...	1					
	28	3	...	...					
	29	2	1	...					
	30	.	1	...					
Nov. 6 ...	1	2	...	...	10?	60·7	48·0	S.W.	0·84
	2	2	...	2					
	3	...	1	...					
	4	1		...					
	5	1	(1)	...					
	6	1		...					
Nov. 13...	8	1	1	...	9	49·2	43·0	S.W. and N.E.	1·30
	10	2	...	...					
	11	3	...	...					
	12	1	...	...					
	13	1	...	...					
Nov. 20...	15	2	...	...	9	55·0	45·1	S.W.	1·77
	16	2	...	...					
	17	3	1	...					
	19	...	1	...					
Nov. 27...	21	2	...	...	8	51·0	40·6	N. and S.W.	1·46
	22	1	...	1					
	24	2	...	...					
	25	1	...	...					
	27	1	...	...					
Dec. 4 ...	29	1	...	1	15	47·0	37·5	S.W.	0·33
	30	...	1	...					
	1	1	2	...					
	3	2	1	1					
	4	3	2	...					

(1) These entries are uncertain; the MS. by my amanuensis not being very reliable in this part.

1852. Week ending	Date.	St. Bartholomew's Hospital.	St. Thomas's Hospital.	Metropolitan Free Hospital.	Total Number.	Mean highest Temperature in the Week.	Mean lowest Temperature in the Week.	General Direction of Wind.	Sum of Rainfall in inches.
	5	6	...	...					
	6	...	1	...					
Dec. 11 ...	7	2	...	1	17	53·1	46·3	S.W.	0·61
	8	3	...	...					
	11	3	1	...					
	14	3	1	...					
	15	1	...	...					
Dec. 18 ...	16	...	1	...	8	53·1	43·8	S. and S.W.	0·59
	17	...	...	1					
	18	1	...	...		(1)			
Dec. 25 ...	20	1	...	...	2	51·9	40·5	(2)	0·05
	21	...	1	...					
1853.	27	1	...	...					
	28	2	...	...					
Jan. 1 ...	29	2	...	...	8	51·7	41·8	S.W.	0·43
	30	1	...	...					
	31	1	...	...					
	1	1	...	...					
	2	1	...	...					
	3	3	...	...					
Jan. 8 ...	4	3	1	1	14	51·2	39·1	S.W.	0·71
	5	3	...	...					
	6	...	1	...					
	7	1	...	...					
	10	1	...	...					
	12	1	...	1					
Jan. 15 ...	13	1	2	...	13	50·5	39·8	S.W.	0·45
	14	...	1	...					
	15	2	4	...					
	17	2	...	...					
	18	1	1	...					
Jan. 22 ...	19	2	...	...	8	47·2	36·1	N.W. and S.W.	0·59
	20	1	...	...					
	22	1	...	...					
	24	2	...	...					
	25	...	1	...					
Jan. 29 ...	26	...	1	...	8	41·7	34·6	N.E.	0·007
	27	2	...	...					
	28	1	...	...					
	29	...	1	...					

(1) For these last five weeks, no electricity shown by any instruments. For the next three weeks no record given, the electrical apparatus having been injured by a gale, which I regret, as the sudden rise might have been compared with the results.

(2) Much calm; S. and W. prevailing.

1853. Week ending	Date.	St. Bartholomew's Hospital.	St. Thomas's Hospital.	Metropolitan Free Hospital.	Total Number.	Mean highest Temperature in the Week.	Mean lowest Temperature in the Week.	General Direction of Wind.	Sum of Rainfall in inches.
Feb. 5	31	2	...	...	7	42·3	32·0	(1)	0·20
	2	1	...	...					
	4	1	1	...					
	5	1	...	1					
Feb. 12	7	1	...	...	9	39·5	31·5	S.E. and N.N.E.	0·06
	8	2	...	...					
	9	3	...	...					
	11	1	...	1					
	12	1	...	...					
Feb. 19	14	2	1	...	13	35·5	26·1	N.	0·33
	15	2	1	1					
	16	2	...	...					
	18	1	2	...					
	19	1	...	...					
Feb. 26	21	1	1	2	17	39·8	28·0	N.	0·39
	22	2	...	...					
	23	...	1	1					
	24	1	...	...					
	25	3	4	...					
	26	..	1	...					
March 5	28	2	...	...	11	42·8 (3)	29·7	(2)	0·68
	1	1	1	...					
	2	1	...	2					
	3	1	1	...					
	4	1	...	...					
	5	1	...	...					
March 12	8	2	...	...	4	53·8	37·1	(4)	0·17
	9	...	...	1					
	10	...	1	...					
March 19	13	2	...	...	9	44·7	31·0	N E.	0·51
	14	...	1	...					
	15	...	1	...					
	17	3	...	...					
	18	...	1	...					
	19	1	...	...					
March 26	21	...	1	...	6	41·7	26·0	N.E.	0·10
	22	1	1	1					
	26	...	2	...					

(1) Much calm: N. and E. prevailing

(2) Variable; from all points of the compass.

(3) Electricity was only shown once this week and once the week before. The week before that there was none.

(4) Almost always calm.

1853. Week ending	Date.	St. Bartholomew's Hospital.	St. Thomas's Hospital.	Metropolitan Free Hospital.	Total Number.	Mean highest Temperature in the Week.	Mean lowest Temperature in the Week.	General Direction of Wind.	Sum of Rainfall in inches.
April 2 ...	28	...	3	...	13	53·5	34·3	Variable	0·44
	29	1	2	...					
	30	1	...	...					
	31	...	1	1					
	1	...	1	...					
	2	2	1	...					
April 9 ...	4	1	2	...	9	55·9	43·3	W.	0·44
	5	...	1	...					
	6	...	1	...					
	7	2	1	...					
	9	...	1	...					
April 16...	11	3	3	...	11	52·9	38·0	N.E. and N.W.	0·02
	12	...	1	...					
	13	...	...	...					
	14	1	2	...					
	16	...	1	...					
April 23...	18	4	1	...	11	54·5 (1)	41·3	Variable	0·90
	19	...	1	...					
	20	1	...	...					
	21	2	...	...					
	23	2	...	...					
April 30...	25	1	...	...	4	51·7 (2)	36·0	Variable	1·32
	27	...	...	1					
	28	1	...	...					
	29	1	...	...					
May 7 ...	2	1	...	1	9	57·2	41·4	E., S.E., and N.E.	0·84
	4	...	1	1					
	5	4	...	...					
	6	...	...	1					
May 14 ...	9	2	...	...	8	56·0	37·1	Variable	0·37
	11	...	1	1					
	12	1	1	...					
	13	...	1	...					
	14	...	1	...					
May 21 ...	16	3	...	...	8	67·1	43·8	N.E.	0·00
	19	1	2	...					
	20	2	...	...					
May 28 ...	23	1	1	...	9	72·6	46·4	N.E.	0·13
	24	1	1	...					
	25	...	...	2					
	26	1	1	...					
	28	...	1	...					

(1) Up to this time, ever since the last note, the electrical apparatus was undergoing repair.

(2) Electricity strong, negative and positive, during four days.

1853. Week ending	Date.	St. Bartholomew's Hospital.	St. Thomas's Hospital.	Metropolitan Free Hospital.	Total Number.	Mean highest Temperature in the Week.	Mean lowest Temperature in the Week.	General Direction of Wind.	Sum of Rainfall in inches.
June 4 ...	31	1	...	1	8	62·1	46·1	N.	0·42
	2	...	2	...					
	3	...	2	...					
	4	1	...	1					
June 11 ...	6	2	1	...	12	73·3	49·2	S.W. and S.E.	0·24
	7	1	...	1					
	8	1	1	...					
	9	1	...	...					
	10	1	3	...					
June 18 ...	14	2	1	...	7	69·3	51·2	N. and S.W.	1·30
	16	2	...	...					
	18	2	...	...					
	20	...	...	2					
June 25 ...	23	3	1	...	11	67·7	48·9	Variable	0·55
	24	1	2	...					
	25	1	1	...					
July 2 ...	27	...	2	...	16	68·3 (2)	53·2	S.W.	0·89
	28	3(1)	...	...					
	29	2	...	...					
	30	3	1	...					
	1	3	...	2					
	2	...	1	...					
July 9 ...	4	4	2	1	22	75·2	55·6	S.W. and S.	0·88
	5	...	1	1					
	6	1	2	1					
	7	...	3	...					
	8	...	2	...					
	9	2	1	1					
July 16 ...	11	1	1	...	9	68·3	52·2	S.W.	3·14
	12	...	1	...					
	15	...	2	...					
	16	4	...	...					
July 23 ...	18	1	3	1	14	69·6 (3)	53·2	S.W.	0·29
	19	1	2	1					
	20	1	...	...					
	21	1	...	1					
	22	...	...	1					
	23	1	...	...					

(1) One of these from stricture.

(2) Positive and negative electricity, with strong tension, has been shown during the week, at times when rain fell. The next week the electrometer, as was commonly the case of late, was out of repair till the last day (9th), when it showed negative and very active.

(3) No electricity for three days; three days positive and weak; one day negative and active.

1853. Week ending	Date.	St. Bartholomew's Hospital.	St. Thomas's Hospital.	Metropolitan Free Hospital.	Total Number.	Mean highest Temperature in the Week.	Mean lowest Temperature in the Week.	General Direction of Wind.	Sum of Rainfall in inches.
July 30 ...	25	1	1	...	9	70·2	54·8	S.W.	1·39
	27	2	...	1					
	29	2	1	...					
	30	...	1	...					
August 6	1	1	2	...	11	73·3 (1)	52·3	S.W. and calm	0·01
	2	2	2	...					
	4	1	...	...					
	5	...	1	...					
	6	...	2	...					
August 13	8	2	1	...	8	73·5	51·4	(2)	0·00
	9	1	...	...					
	10	1	...	...					
	11	...	1	...					
	12	...	1	...					
	13	1	...	...					
August 20	15	1	...	...	6	70·4	53·8	N. and S.W.	0·59
	16	1	1	...					
	17	2	...	...					
	20	1	...	...					
	21	1	...	...					
August 27	22	...	1	...	6	67·8 (3)	51·3	S.W. and N.	1·50
	23	...	...	3					
	27	...	...	1					
Sept. 3 ...	29	2	...	...	4	65·6	48·4	S.W.	1·03
	30	2(4)	...	...					
Sept. 10...	5	...	2	...	15	65·9	49·6 (5)	N.	0·22
	6	1	...	1					
	7	1	1	...					
	9	4	1	1					
	10	3	...	...					
Sept. 17...	12	2	...	...	9	67·7	48·7	(6)	0·57
	13	...	1	...					
	14	1	1	...					
	15	1	...	...					
	16	...	1	1					
	17	...	1	...					

(1) Electricity mostly positive, and tension weak or moderate.
(2) Principally E.
(3) Both this week and last the electricity was much more active, both positive and negative. Tension strong or moderate.
(4) These are called "swelled testicle" in the book.
(5) Electricity always positive; tension mostly moderate, sometimes very strong.
(6) Much calm; E. rather prevailing.

1853. Week ending	Date.	St. Bartholomew's Hospital.	St. Thomas's Hospital.	Metropolitan Free Hospital.	Total Number.	Mean highest Temperature in the Week.	Mean lowest Temperature in the Week.	General Direction of Wind.	Sum of Rainfall in inches.
	19	1	1	...					
	20	1	...	...					
Sept. 24...	21	...	1	...	8	65·9	44·9	W.	0·19
	22	...	1	...					
	23	...	...	1					
	24	1	...	1					
	26	3	1	...					
	27	2	...	...					
Oct. 1 ...	28	...	1	1	11	62·1	44·1	S.W.	0·69
	29	...	1	...		(1)			
	1	2	...	...					
	3	2	2	...					
	4	1	...	1					
Oct. 8 ...	5	1	...	...	10	56·3	41·3	Calm	1·03
	7	1	...	...					
	8	1	1	...					
	10	1	3	...					
	11	1	...	2		(2)			
Oct. 15 ...	13	1	...	...	13	60·9	45·2	Calm and N.E.	0·94
	14	2	1	1					
	15	1	...	...					
	17	1	...	1					
	18	...	2	...					
Oct. 22 ...	19	1	...	...	8	57·3	41·7	S.W.	1·10
	20	1	...	...					
	22	1	1	...					
	24	3	...	...					
	25	1	...	...					
Oct. 29 ...	27	1	1	...	10	62·9	49·4	... ...	1·46
	28	...	...	1					
	29	2	1	...					
	31	1	...	...					
	1	2	2	...					
	2	2	...	...					
Nov. 5 ...	3	4	1	...	17	56·1	42·8	S.E.	0·03
	4	2	...	...		(3)			
	5	1	2	...					

(1) With the exception of a small amount of positive electricity at 3 a.m. on Saturday, none was shown throughout the week.

(2) No electricity was shown during the preceding week, or during the first days of this week, after which the apparatus is again reported "under repair."

(3) During four days of this week, and three days of the week preceding, the electrical apparatus was out of repair. On every other day, and during the whole of the week ending November 12, it showed positive electricity, the tension being strong towards the close of this time.

1853. Week ending	Date.	St. Bartholomew's Hospital.	St. Thomas's Hospital.	Metropolitan Free Hospital.	Total Number.	Mean highest Temperature in the Week.	Mean lowest Temperature in the Week.	General Direction of Wind.	Sum of Rainfall in inches
Nov. 12 ...	7	...	2	1	15	52·7	39·2	Calm	0·06
	10	3	2	...					
	11	3	1	...					
	12	1	2	...					
Nov. 19 ...	13	1	...	...	10	48·8	31·8	Calm and variable	0·00
	14	2	...	...					
	15	...	1	1					
	16	1	...	1					
	17	1	1	...					
	18	1	...	...					
Nov. 26 ...	22	2	...	...	7	43·9	30·8	Calm	1·25
	23	1	1	...					
	24	...	1	...					
	25	...	1	...					
	26	...	1	...					
Dec. 3 ...	28	...	2	...	10	45·7	34·7	(1)	1·05
	29	...	1	...					
	30	...	1	...					
	1	1	1	1					
	2	1	...	...					
	3	1	1	...					
Dec. 10 ...	5	1	1	...	12	(2) 43·6	35·9	... ...	0·13
	6	1	1	...					
	7	3	2	1					
	9	1	...	1					
Dec. 17 ...	11	1	...	...	8	(3) 37·8	27·6	N.E.	0·12
	12	2	1	1					
	13	...	1	...					
	14	1	...	...					
	16	...	1	...					
Dec. 24 ...	18	1	...	...	10	35·9	29·8	N.E.	0·10
	19	1	1	...					
	20	..	2	...					
	21	...	1	1					
	22	...	1	...					
	24	...	2	...					
Dec. 31 ...	26	1	..	...	10	35·1	23·6	... ...	0·16
	27	...	2	1					
	28	...	1	..					
	29	1	...	...					
	30	1	2	...					
	31	...	1	...					

(1) Much calm; E. prevailing.
(2) Positive and tension very strong during last three weeks; declines this week.
(3) Electricity positive and strong.

The entire number of cases then, obtained in 1852 was 309 ; and for 1853, 535. On consulting the table for 1852, it will be found that there was a slight but steady rise up to the end of the third quarter of the year, when the proportion increased so rapidly that in October there were nearly twice as many cases as in the highest of the preceding months. The greatest number in any one week occurred in the second week of December, and the next greatest number in the first week of the same month. The minimum of cases ensued in June, April, July, and August.

In 1853 the maximum was attained in July—which, it will be seen, yields 70 cases ; next to this stand October, giving 52, and January, which gives 51. The lowest number is met with in March, August, May, September, and June, which possess an average of less than 34 ; while January, April, and November show about one-third as much again. Along with this table the reader will find one of the weather for those two years, and will thus have an opportunity of forming his opinion *from facts.*

Whether changes in the electric state of the air have anything to do with the presence of orchitis, is more than I know. I certainly suspect they have, far more so at any rate than heat or cold, the influence of which in producing disorders is, to my thinking, quite overrated. In the present instance it will be seen that, during the greater part of the first eight months of 1852, the number of cases is exceedingly small. Now during far the greater part of this time, week after week, the electricity is reported as *positive* with *moderate tension*, the number of days on which *negative electricity* was shown *being very few indeed.* In the second week of September, the number of cases is greater than had been noted for a long time, and the electricity is reported *negative* and *very active.* Immediately after this there is a fall in the number, and the electricity is again marked *positive* and *active.* Then, after a slight wavering, a great increase in the number of cases will be found for many weeks after, and from this time till Christmas the reports give "no electricity at all." But here, unfortunately, the clue of the investigation is lost, for the electrical apparatus was so damaged by a gale of wind that a long time elapsed before it could be set to work again.

An opinion that gonorrhœa is more liable to relapse at certain times of the year than at others, has been advanced by some authors ; M. Robert says that the spring seems greatly to favor relapses, and I have fancied I detected something of the tendency myself during the prevalence of cold, dry, east winds. The question, however, is difficult to settle till we have much better data. If the mere revolution of seasons influenced the number of cases, we might expect a regularly recurring increase in spring, and of this I have not as yet seen any proof worth notice.

We do not possess such full information as might be wished with respect to the proportion of gonorrhœa patients attacked by orchitis. M. Le Fort gives it at 129 to 914, the latter being all cases of first infections, but this

is very much higher than anything I have seen. Castelnau found[1] the proportion to be as high as 1 in 4½, or 265 in 1,172, while Gaussail computed the relative numbers at 1 to 10, and Fournier at 1 to 8 or 9 ; figures much more in accordance with my own observations than those of the two first authors.

From a table by M. Castelnau[2] of 239 cases, we learn that the affection appeared in the 1st week of the gonorrhœa 16 times, in the 2d 34, in the 3d 24, in the 4th 39, in the 5th 54, in the 6th and later 72 ; whereas Fournier in 206 cases found none in the 1st week and only two on the 8th and 9th day.

M. Després holds[3] that relapsing orchitis is due to retention of the semen in the testicles. The cause of this does not always exist at the same point, but it is more than probable that swelling of the mucous membrane of the ejaculatory duct or of the vas deferens, or even peripheral swelling of the prostate or of the mucous membrane of the urethra, may induce the retention of the seminal fluid. As suppuration is so rare in orchitis, the affection might very well be called spermatic engorgement of the testicle, just as retention of the milk in the mamma is called lacteal engorgement, a suggestion of doubtful utility till we feel quite assured that we have mastered the pathology of the disease. Orchitis of this kind ensues after cutting for the stone. With proper deference to M. Després, it seems to me that the action is purely reflex ; but I agree with him in this much, that I think a great deal of the morbid action we are called upon to meet begins with spasm, a doctrine long ago laid down by myself in earlier editions of this work.

Prognosis.—Always favorable when the affection is taken in time and the patient endowed with reasonable prudence and perseverance ; qualities, however, not unfrequently wanting. Extensive effusion into the vaginal sac and hardening of the cauda epididymis may prove very obstinate, especially if not duly attended to, but all their more serious results can always be removed.

Results.—Among these are enumerated death, neuralgia of the organ as also of the pudendal plexus,[4] intense tenderness, setting up a fixed desire to have the gland removed,[5] tuberculous deposit, cancer,[6] abscess, effusion more or less extensive into the vaginal sac, suppuration in this cavity,[7] sphacelus of the testicle from inflammation attacking essentially the body of this organ,[8] destruction of the seminiferous tubes,[9] wasting of

[1] Op. citat. p. 197. [2] Ibid., p. 199. [3] Gazette des Hôpitaux, p. 965. 1878.

[4] Zeissl: Wiener medizinische Zeitung, 1870. Quoted in the Archiv für Dermatologie, B. iii., S. 413.

[5] Lectures of Sir Astley Cooper, vol. ii., p. 155. 1825.

[6] Robert: Op. citat., p. 221 ; Phillips: Op. citat., p. 120.

[7] Johnson : Op. citat., p. 193.

[8] Nouveau Dictionnaire de Médecine, tome v., p. 222. 1866.

[9] The Structure and Diseases of the Testis, part ii., p. 23. By Sir Astley Cooper.

the testis, and impotence. Only two authors, I think, mention death as a consequence, so that it must be very rare. I quite concur in what Rokitansky says as to neuralgia being a rare result. I have often seen a good deal of weary aching and pain in the testicles follow gonorrhœa, and still more frequently if complicated by a sudden outbreak of spermatorrhœa, but I never saw orchitis end in what I should call genuine neuralgia of the testis. The connection of the two is, indeed, in no way established: and as to carcinoma, we may almost class it with the prejudices of a bygone age. If such an occurrence had been at all common, we ought to have had some proofs of it before now. The absorbent vessels of the penis and scrotum, we are told, may become inflamed on such occasions; I have not seen this. Of sphacelus of the testicle I can say nothing from personal experience, having never seen such a termination of the disorder, though, like others, I have had to treat the latter. According to M. Fournier, who gives a very clear account of it, the unfortunate issue of the case is marked by sudden cessation of the "atrocious" pain which accompanies its earlier stages. M. Mauriac, in a series of exhaustive papers,[1] gives a very full account of the nervous pains set up by orchitis in the hypogastrium, groin, posterior crural region, waist, lower and front part of belly, sacro-iliac articulations, thighs, loins, etc.; more perhaps to be considered as complications than results.

The real results to dread are obliteration of larger or smaller portions of the seminal tubes, owing to deposit of fibrine; effusion of serum; hardening of the epipidymis, generally seated in the cauda, where it forms a small knot; wasting of the testicle, and suppuration in it or the scrotum.

That hardening of the epididymis, especially if it affect both sides, may lead to impotence, is a general and well-founded opinion. Mr. Curling mentions[2] several cases of absence of semen after orchitis of both testicles, and I have seen the same thing. Suppuration of the testicle and deposit of fibrine among the convolutions of the epididymis may go on to a considerable extent without interfering with the functions of the gland.

There can be little doubt that authors are right in assuming that impotence does not follow so long as the disease is only confined to one gland or limited to mere hardening. But this hardening is also apt to be accompanied or followed by contraction of the sole channel for the expulsion of the semen. Mr. Holmes Coote told me that he had often found induration accompanied by obstruction of the epididymis. M. Gosselin's observations, and those of M. Marcé and M. Charles Robin, confirm this view, and my own are quite in accordance with it. Indeed when a delicate mucous membrane is converted into a rigid contracted tube, we can hardly expect that it will execute its normal functions. M. Robert, however, has

[1] Gazette Médicale, p. 331, etc. 1869.

[2] On the Diseases of the Testis, p. 439. 1866.

seen,[1] at the expiration of five or six months, a return of the animalculæ after double epididymitis, at first in small numbers, but subsequently as numerous as if there had never been a pathological change in the organs.

Treatment usually Adopted.—We are generally recommended to treat this affection by antiphlogistics. The plan of combating it by emetics, so greatly patronized by many of the older writers, has, generally speaking, died a natural death, though here and there, evidently enough, its ghost still lingers; a relic of faith in this treatment may also be traced in the nauseating doses of antimony prescribed by some writers. The recommendation to use antiphlogistic means is only consistent with the theory of those who consider that inflammation is not to be exercised but by measures which reduce the patient's health; they who hold such a view ought to stand by the axiom that we can only banish the intrusive demon *secundum artem*. But I am inclined to suspect that the system now lives only by sufferance, and that no one of its supporters, if put to the test, could prove it to be called for. Bleeding, considered by M. Robert indispensable when the body of the testicle is affected, owes its tenure of existence, if indeed it exist at all, to a long and most respectable descent, to ancestral prestige in fact; but I suppose we may look upon it as gone for good, whatever affection of the organ may seem to call for it. Leeches, calomel, antimony, salines, etc., often leave the pain unrelieved for eight or ten days, and so long as this lasts the inflammation is not subdued. Still less can we assume that it is even quelled by these means, seeing that if the patient remain in bed and restrict himself in respect to diet he will be cured just as quickly. *Leeches indeed can only diminish to a fractional extent the quantity of blood driven toward any inflamed part*, whereas the object of the surgeon should be, *not to abstract blood, but to check the action which impels it in an abnormal direction.* The congestion of this fluid offers a check to the process; by relieving this arrest we set it going again *pleno rivo*.

Mr. Judd narrates[3] a case of orchitis in which twenty leeches were applied to the testicle, with the effect of removing the pain. The day after this is stated, we find that the gland is larger, more tender and reinflaming, and the day after this again, we are told that the patient is still suffering from a good deal of swelling and pain in the part, "although the leech-bites bled until he fainted!" Again, M. Salleron gives[3] one where the patient was bled freely, and where, two days after, the pain was worse than ever. Thirty leeches were then applied, and then thirty more, without any good being affected. Mr. Johnson, who used to lay the patient up, order leeches, and give calomel, opium, and antimony, occasionally adding salines and colchicum, says, "It is a very severe attack indeed which *in less than a*

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[1] Op. citat., p. 233. [2] Op. citat., p. 52.
[3] Archives Générales de Médecine, tome ii., p. 165. 1870.

week of this treatment, has not lapsed into a milder form." And again: "I believe that the average duration of an acute attack, treated in the manner I have recommended, is between two and three weeks. When relapses take place *they may protract it to a month, or six weeks, or longer.*" As to the inconveniences said to result occasionally from the use of leeches, such as erysipelas, they would not deter me from employing a remedy from which I could expect aid. I believe them to be imaginary, and I am compelled to state that the diametrically opposite evidence on this point in England leads me, and indeed would lead any one else, to surmise that conjecture, respect for authority, and conviction have had more to do with the matter than observation and analysis.

With regard to some other parts of the treatment, such as puncture of the scrotal veins, what little I can make out is that they are entirely useless, although not harmless, as one patient died from a vein in the scrotum being opened; a catastrophe which perhaps induced the surgeon to alter his views on the subject.[1] Puncturing the scrotum on M. Velpeau's method, whatever it may be, for he merely speaks[2] of it as "puncture of the tumor," seems to have been almost as unfortunate. M. Demarquay saw wasting of the testicle in three cases, and, including one of orchitis from stricture, four cases where it was trusted to, but in one of these if not in all, the tunica albuginea was opened; and M. Montanier noticed serious bleeding after it, although the incisions were mere pricks (mouchetures).[3] My experience of tartar emetic, calomel, and other items of antiphlogistic treatment, is not more favorable, or, in plain terms, I believe them to be perfectly useless. Tartar emetic is a most potent remedy in controlling inflammation of the cellular tissue, but has little influence over those of mucous membranes, and *in orchitis I have generally found that it produced no change whatever.* It occasionally checks the formation of abscess in the scrotum, but I am not aware of any other good that results from using it.

I suppose we or our descendants will some day be treated to a dissolving view of those doctrines; but in the meantime, as arguments will never work conviction, I will take the liberty of putting the rather awkward question—whether any of those who recommend leeches, etc., have ever taken the pains to ascertain if there are justifiable grounds for putting patients to such expense and weakening their health, for these are two almost unfailing results of antiphlogistic treatment. Except Mr. Curling, all those authors who fix a time at all, *give a week* as necessary to subdue the more severe symptoms of orchitis, and thirty or thirty-five days as the requisite period for a cure. Now as any case of orchitis *will get well as fast as this if the patient only remain in bed*, it becomes more than doubtful

[1] Johnson: Op. citat., p. 204.

[2] Leçons orales de Clinique chirurgicale, tome iii., p. 461. 1841.

[3] Bulletin de Thérapeutique, p. 550. 1858.

whether the treatment recommended on such respectable authority really has the slightest influence over the complaint.

Puncture of the Tunica albuginea.—Mr. Henry Smith [1] incises the tunica albuginea in severe cases of orchitis, for which variety principally he reserves the operation. He makes a deep and free incision through the tunic, with the effect of letting out several drachms of blood and serum. Nothing else is done beyond prescribing a little "white mixture" (a saline aperient, I presume, containing magnesia) and the ordinary lead lotion of the hospital.

Mr. Smith describes the effect as highly satisfactory. The relief to the pain is so decided that the patient feels it has given way before he leaves the room, and the change for the better which takes place within the first forty-eight hours is so great as to attract general notice. This he justly attributes, not to the loss of blood, but to the removal of the constriction exerted by the fibrous envelope. He has never seen the operation followed by any disagreeable symptoms but twice. In one case, puncture of the testicle in a middle-aged man brought on rapid effusion of serum into the tunica vaginalis; but this was speedily relieved. In the other case the incision was made much deeper than necessary, the point of the knife being carried nearly to the back of the organ. The only results, however, were a little faintness and the loss of about ten ounces of blood. The relief given in this case was more speedy and effectual than usual.

The practice has been long in vogue in Paris; it was recommended by Jean Louis Petit, was extensively adopted by the late M. Vidal de Cassis, who punctured to the extent of a centimetre and a half, and received the high sanction of M. Ricord; Pirogoff, too, Mr. Smith tells us in a later communication, punctured as far back as 1852. He adds that in the practice which comes under his cognizance swelled testicle is treated in the most heroic way, all the barbarities of the old school being combined with the worst features of modern treatment. Emetics, purgatives, leeches, strapping, are still in full play. Such, at any rate, is the picture drawn by one of the surgeons to the hospital where all this kind of thing was being daily enacted at the date of Mr. Smith's communication, and it must be admitted that it does not give us a very favorable idea of the practice at the sources from whence alone we ought to derive our inspirations.

Mr. Smith's assertions were openly challenged by Mr. Holmes, and a squabble ensued not at all calculated to produce a favorable impression as to the mode in which scientific discussions are conducted in some of our English medical journals, startling assertions of success being met by something like flat denial; the value of an operation contested, not so much on the evidence of trials and experiments as on that of authority and

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[1] Lancet, vol. ii., p. 149. 1864.

possibility; and finally both disputants, though perhaps with their own convictions a little modified, claiming a complete victory.

Mr. Smith says that he has performed the operation about a thousand times, reserving it for the more severe forms. Supposing the latter to amount to one in four of all the cases, this will give us about four thousand in eleven or twelve years. To those who remember that the *entire* number of orchitis cases in three of our hospitals, two of them among the largest in London, was, *for two years*, only eight hundred and forty-four, and that these have to be divided among ten assistant surgeons, the number operated on by Mr. Smith seems enormous. This gentleman appeals, not only to the success of his own practice, but to that of others whose testimony he quotes. One of those, however, who are exhorted to bear evidence, gives it against the operation, but Mr. Smith disposes of his objections by saying, substantially, that when he knows more he will know better.

While according due weight to the opinion of the gentlemen whose authority Mr. Holmes quotes against the operation, and whose opinion I should be one of the last persons to contest, I yet quite agree with Mr. Smith, that the question is one to be decided, not by authority and conviction, but by trial of the method; and I think that he has here the advantage over his opponent. Mr. Holmes says he cannot see how the operation is to do good, and speaks of it as splitting the tunica; the immediate answer to which is that it has done good, and that the testicle is simply pierced by means of a bistoury, from one-eighth to a sixth of an inch broad, to a depth of half or three-quarters of an inch, immediately after which the blade is withdrawn, so that Mr. Smith has modified his earlier views.

Mr. Holmes goes so far as to say, that a large proportion of those patients cited as having been so promptly relieved by incision, are precisely those whose sufferings we need in no way particularly regret. Whether students or costermongers, they belong to a class whose absence, when confined to their bed-rooms by orchitis, society is the least likely to lament. I trust my readers will agree with me in thinking, that it is not desirable to follow Mr. Holmes into this part of the argument, which may be strictly correct, looked at from a social point of view; but which seems to me a mistake in a medical paper, and one the more to be regretted, because his deserved eminence placed him above the necessity for going out of his way.

It is just possible that in some few cases incision may be a good, or even the best, remedy. Thus, for instance, Mr. Nunn had under him[1] a case of swelled testicle, where suppuration from the same complaint in the fellow-gland had previously given a great deal of trouble. In the attack

[1] Lancet, vol. i., p. 158. 1870.

for which the patient was admitted under Mr. Nunn, a third of a grain of morphia three times a day had, at the end of four days, effected no improvement, yet the operation proved quite successful. In undescended testicle, too, when affected by orchitis, it may turn out to be useful, having been successfully employed here by Mr. Johnson Smith,[1] who punctured, with "a deep stab," a testicle thus affected, and lying between the external and internal ring of the left side.

But I believe that, as a general rule of treatment, it will not hold its ground. There seems no doubt that in some cases it did not afford the relief expected from it. The operation has been given up by some of those who saw it fairly tried and tried it fairly themselves. Taking the average results on Mr. Smith's own showing, they are not more satisfactory than those of Mr. Gay's cases, or of my own practice.

M. Aubry, who seems to have honestly studied the matter, did not find that puncture materially shortened the duration of the complaint.[2] The bulk of patients will always shrink from operations of such a nature, and will rather risk mischief than face the remedy. There seems little doubt that harm has resulted in some cases from the practice, and we know that an operation, however safe when skilfully performed, will find bungling imitators and will then do mischief.

Mr. Spencer Watson, in a communication to be presently noticed, said that he had heard of one case, though he had not seen it, where atrophy followed incision into the testis, but he hesitates about ascribing this result to the operation; I think, however, there can be little doubt that it was the cause of atrophy in two cases where M. Salleron tried it,[3] as also in two mentioned by M. Diday.[4] In the *Giornale italiano* for 1871[5] there is a very short account, taken from the *Lyon médical*, of a case in which the operation was followed by abscess, gangrene, and hernia of the gland; and in the following case it was, whether skilfully performed or not, attended by consequences to all appearance of a most lamentable nature.

In the summer of 1873 a gentleman consulted me for what he called spermatorrhœa, of which he gave the following account. More than two years previously he had contracted gonorrhœa while at college. He could not tell me much about the treatment, which seemed to have consisted chiefly of specifics. Before he had quite recovered, he was prevailed on by some friends to run a foot-race; almost directly after he had done so the right testicle swelled badly, for which the surgeon who attended him made a free incision. This gave relief, a quantity of blood was lost and the swelling slowly subsided. Some time afterward, with gonorrhœa still

[1] Ibid., vol. i., p. 468. 1872.

[2] Annales des Maladies de la Peau, p. 299. 1844.

[3] Archives Générales de Médecine, tome i., p. 163. 1870.

[4] Annales de Dermatologie, p. 23. 1869.

[5] An., vi., p. 240.

uncured, he was foolish enough to indulge in some very hard rowing, whereupon the other testicle swelled and was similarly treated by the surgeon. This time, however, the patient suffered a good deal from pain in the loins, followed, at a later date, by obstinate and serious abscess near the right tuber ischii.

At the time when the patient called on me, he complained of great and increasing decline in sexual desire, though he was quite a young man. I endeavored to get some of the semen for examination, but he said that he scarcely thought now of attempting connection, though previously his passions had been very strong ; and that he never had any emissions, so that no supply could be obtained. I could not discover with certainty in what direction the incisions had taken effect ; the traces of them were faint and the patient did not seem to have noticed much about the matter ; but, as well as I could make out, there had been in each case a long cut, dividing great part of the lower end of the testicle, and possibly part of the cauda epididymis.

Puncture of the Tunica vaginalis.—This operation has been recommended as superior to the other by Mr. Spencer Watson. In a careful report[1] of his practice we learn that, after an experience of about twenty cases, he finds it well adapted to instances marked by effusion into the cavity, but not to those where the epididymis is alone or principally affected. Mr. Richmond, however, in a paper read before the King's College Medical Society,[2] had previously borne testimony to the relief afforded by puncturing this membrane being quite as great as when the testicle is cut into. But the results do not tally with those of Messrs. Ragazzoni and Appiani, who found[3] that, in twelve cases of orchitis, puncture of the tunic put an end to the affection, but that it required twelve days to do it in, and my experience is that mere rest would have effected as much good. The strongest condemnation, however, passed upon it is by Mr. Watson himself, who has abandoned the operation, except when there is much effusion into the tunica vaginalis, being "inclined to think" that opium and antimony give relief as quickly. I need scarcely say that this looks very much like giving the method up altogether. At a somewhat later date Mr. Macnamara, of Westminster Hospital, was in the habit of puncturing the testicle with a grooved needle, with excellent results.[4]

As to the treatment of orchitis by means of tartar emetic in friction, I can only say, from what I have read, that it appears to unite in itself all the disadvantages which can possibly attend any method. One of the medical men who writes in praise of it, warns his reader, that they should guard against the pustules coming out too thickly, as this state may be fol-

[1] Medical Times and Gazette, vol. i., p. 520, 1866 ; and vol. i., p. 390. 1867.
[2] Ibid., vol. ii., p. 479. 1864.
[3] Giornale italiano, 1870. Quoted in Archiv für Dermatologie, B. III., S. 57.
[4] Lancet, vol. i., p. 50. 1877.

lowed by "vicious" cicatrices and gangrene of the tissues! Seeing that these undesirable results only accompany a very moderate success in the way of cure, it is difficult to make out what possible reason there can be for giving the method a trial.

Strapping the Testicle is now, I fancy, rather a matter of tradition than of actual practice, and any notice of it, therefore, more the offspring of a desire to make the author's work complete, than a practical exposition of the benefits observed to flow from the operation. I certainly think surgery will not suffer much from its falling into desuetude. It is dirty, painful, and, generally speaking, uncalled for; and as gangrene has been known,[1] though I admit very rarely, to follow the employment of it, the inconveniences of the practice must, in my judgment, be held to outweigh the advantages.

Among many other methods commended to our notice are—1. Continuous application of ice, long ago employed by a most careful surgeon, Mr. Curling,[2] with marked success, the pain in the first case recorded being materially relieved in a day. Enthusiastically recommended by M. Diday as infallible and relieving the pain within an hour, though requiring to be continued eighteen to forty-eight hours, and even four or five days; now apparently abandoned by him in favor of M. Langlebert's method, which is opposed as any process can well be. 2. Freezing the testis, the same process presumably under another name; seemingly dead, and certainly long disused at one hospital where it was formerly much in favor. 3. The method recommended by Dr. Waterman,[3] acetate of morphia and acetate of potass internally, tincture of iodine and ammonia being applied topically. 4. That of Dr. Grammer,[4] bromide of potassium, five grains three times a day. 5. The method of Dr. Julian Alvarez,[5] which consists in the application of iodoform ointment, a plan recommended also in the *Union Médicale.*[6] 6. That of Mr. Payne, of Wallingford,[7] painting the scrotum with solution of iodine, a drachm to three ounces of spirit, or with strong tincture of iodine every second day; the cure in one instance being so rapid that by the fifth day the patient was able to resume his employment. 7. That of Dr. Assadorian,[8] constant application of sulphuric ether, a method in the efficacy of which I have great faith. 8. Painting with strong solution of nitrate of silver, as recommended[9] by Mr. Furneaux

[1] Medical Gazette, vol. xli., p. 976.

[2] Medical Times and Gazette, vol. i., pp. 210, 233. 1855.

[3] Practitioner, vol. ii., p. 334. 1876.

[4] Virginia Medical Monthly. Quoted in Louisville Medical News, vol. ii., p. 276. 1881.

[5] La Independencia Medica, June 1, 1877. Quoted in Lancet, vol. ii., p. 898. 1877.

[6] P. 1088. 1881.

[7] Lancet, vol. i., p. 131. 1863.

[8] American Journal of Syphilography, etc., vol. i., p. 216.

[9] British Medical Journal, vol. ii., p. 202. 1868.

Jordan, which he tells us will remove the pain, swelling, and tenderness in twelve hours. 9. M. Bonnafont's plan of applying collodion. 10. Compression in various ways intended to be improvements upon strapping.[1] 11. M. Tachard's system, pressure and subcutaneous injections of chlorhydrate of morphia.[2] 12. M. Langlebert's method. 13. Absolute rest alone, fairly tried in the Ospedale maggiore at Lodi, to my thinking, with most indifferent success, but spoken of in the report as the most speedy method. Thus, without noticing minor points but including Mr. Gay's, we have nineteen distinct systems of treatment. Most of these plans are recommended as unfailing or nearly so, yet with the possible exceptions of Assadorian's and Langlebert's methods, I question if a surgeon, unfortunate enough to have contracted gonorrhœal orchitis, who had the full facts of the case put before him, would prefer any one of them to that of Mr. Gay, which was not ushered into notice as infallible at all, but as an honest record of facts.

One great question is whether experience justifies us in the hope that any system of treatment, however thoroughly its success may have been demonstrated, stands a fair chance of being generally adopted; and whether medicine is not, in many of its branches, so purely a game of hazard, that while a lecture on physiology at a college, or the introduction of a new remedy, will, as surely as the summer sun calls certain forms of being into life, generate a host of scientific experiments, only too many of them aimless and barren; of theories and systems; we cannot feel the slightest confidence that a mode of treatment, be it ever so superior to its predecessors, will even command a hearing.

Thus, so far back as 1844, Mr. Gay showed[3] that orchitis could be cured in half the usual time by large doses of hyoscyamus, a sharp purgative, and suspension of the testicle. On an average the pain was relieved *in less than five days*, while the patients were discharged cured *in from three to seventeen days* or *an average of seven days and a half*.[4] Now with the exception of a note in Mr. Acton's work, recording an unfavorable experience of the method, I believe almost the only notice taken of it was in former editions of the treatise now before the reader. Mr. Pitt, in a communication to the *Lancet*[5] on this very method of treating orchitis, does not mention Mr. Gay's name; in the section on this affection in "Holmes's System of Surgery," it is likewise ignored; and Mr. James Rouse, in his account[6] of the treatment of orchitis with opium, seems not to have had

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[1] Lancet, vol. ii., p. 556. 1863. Archives médicales belges. Quoted in the Gazette des Hôpitaux, p. 230. 1873. Medical Record U. S., January 29, 1880. Australian Medical Journal, April, 1880.

[2] Rev. méd. de Toulouse. Quoted in Gazette des Hôpitaux, p. 211. 1874.

[3] Lancet, vol. i., p. 602. 1844.

[4] Vol. i., p. 429. 1870.

[5] St. George's Hospital Reports, p. 251. 1869.

[6] Ibid., vol. ii., p. 338. 1848.

any idea that Mr. Gay and myself had recommended much the same plan years before.

The originality of the mode has been contested, but the *merit of the discovery belongs to Mr. Gay, and to him alone.* None of the old authors, who have been spoken of as preceding him in this path, ever had the most remote idea of mastering the disorder by means of sedatives only, although even as far back as the time of Astruc their value as adjuncts was known. Swediaur indeed seems [1] to have relied on opium as a medicine, but his great object was to bring back the "retropulsed" discharge, retropulsion being in his day something like what blood-poisoning or suppressed gout is in ours; an ever busy demon which required all the physician's skill and watchfulness to keep it in subjection; a skeleton which not only enjoyed a vested right to a seat in his consulting-room, but rode with him in his carriage, and stood with him at the patient's bedside. To revert, however, to the subject more immediately in hand, two of the many systems just noticed, the examination of which was interrupted by this digression, had better be taken here. They are Bonnafont's and Langlebert's.

M. Bonnafont treated successfully fifty-six cases with application of collodion,[2] the inflammatory symptoms sometimes disappearing in half an hour, and the cure being complete in two to three days; and all this without having in one instance seen anything which contra-indicated its employment, or diminished his confidence in its powers. The pain from it never lasted more than two minutes. M. Costes gave [3] almost as glowing an account. But M. Velpeau found [4] that it required on an average twenty days and a half to cure patients in this way. M. Richet saw [5] frightful pain and great excoriation in a case where M. Bonnafont himself applied the collodion in M. Richet's presence; and M. Venot found the pain set up by collodion intolerable, while the cure was so slow that he abandoned the method as useless.[6] Lastly, M. Ricord reported [7] that the pain, though not of any great duration, was generally severe, that he never witnessed the rapid diminution in the volume of the gland spoken of by M. Bonnafont, and that the results obtained were not of a nature to warrant any recommendation of the method.

M. Langlebert's method consists in applying over the swollen gland a layer of carded cotton, and over this again a piece of caoutchouc cloth. The latter is put on with the glazed side toward the cotton, and over it is drawn a triangular concave suspensory bandage, with a long strap at each corner to tie round the waist. M. Horand reported [8] most favorably to the

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[1] Op. citat., p. 80. [2] Union Médicale, tome viii., p. 222. [3] Ibid., p. 242.

[4] Archives Générales de Médecine, tome ii., p. 613. 1854.

[5] Union Médicale, tome viii., p. 249.

[6] Ibid., p. 311. [7] Ibid., p. 449.

[8] Lyon Médical, April 14, 1878. Quoted in Medical Times and Gazette, vol. i., p. 552. 1878.

Medical Society of Lyons on this method. His conclusions were based on a large number of cases, and practically endorsed by M. Diday. Herr Zeissl also strongly approves of Langlebert's system, which at the date of his communication he had tried in fifty cases, and always with "most excellent results." In one case which he was called to, the patient, who had passed five nights without sleep (!), was suffering fearful pain, every motion and the slightest contact with the testis causing him agony; but so soon as the Langlebert bandage was applied he could get up and walk about the room (!). In most of the cases indeed the pain ceased directly the bandage was put on.

M. Fournier's treatment of true orchitis, as he calls inflammation attacking essentially the testicle, is of the most heroic kind—the freest possible use of antiphlogistics from the very outset, abundant and repeated local bleeding, baths for a long time one after another, strong belladonna inunction, ice to the testicle, intestinal revulsives, meaning I suppose strong purgatives, and finally, at the first suspicion of strangulation, division of the tunica albuginea, which some persons will think might very well have preceded all this; indeed, it is precisely for these cases that Castelnau would reserve puncture.[1]

Proposed Plan of Treatment.—The plan of treatment now to be described was worked out in the same manner as the other divisions of the subject; that is, one remedy at a time was used till its value was ascertained.

The surgeon's first object is to arrest the *pain; with this the inflammation stops.* The assertion has been challenged, I must submit, on insufficient grounds. Nothing effects this purpose so rapidly and so well as sedatives, and it is surprising to me that they should be so little employed, when their value has been so long and so thoroughly established. Provided the dose *is only large enough*, the choice is not of so much moment. I prefer morphia myself, or Battley's liquor opii in the brandy mixture of the Pharmacopœia, the latter being particularly useful when there is a disposition to nausea.

The morphia may be given in doses of a fourth to half a grain two or three times a day; in very severe cases three-fourths of a grain may be given once or twice in succession. To prescribe the twentieth of a grain is simply to trifle with the matter. Similarly, I should never think of giving less than fifteen to twenty minims of Battley's solution every three or four hours, and I should in no way hesitate to use much larger doses. If there be much prostration, ammonia may be added to either of these sedatives, and the solution of the acetate seems to suit very well with the morphia when there is any feverishness.

In the way of external applications, I think that, if the reader will em-

[1] Op. citat., p. 301.

ploy the lotion given [1] below, he will be as much pleased with its effects as I have been. One patient, who had been taking sedatives without much effect for two days, assured me that he felt decided relief in the first half-hour after using the lotion, and that he was, comparatively speaking, well the next day; but at the end of four days I could still feel some enlargement and considerable hardness, both of the testicle and epididymis. Similar testimony has been voluntarily rendered by many patients. The longest time I have known to elapse before relief was perceived was something under three hours. But however beneficially the lotion may act, I would not advise entire abandonment of the sedative; and whether this be given or not, the patient is always the better for a pretty free use of warm aperients, such as senna mixture with excess of tincture of cardamoms, infusion of rhubarb and coriander with sulphate of potass, and so on. A light warm diet is advisable, starvation being useless as well as hurtful; and the patient should therefore be allowed to make himself comfortable on a good basin of mutton or chicken broth, and a little arrowroot with a glass of old port in it, and I have even known many patients to be all the better next morning for a glass of good whiskey and hot water over night. I therefore always suggest a fair amount of such stimulants for the first night or two.

When the patient has been using injections, it will be as well to suspend the employment of them, not for fear of making the swelled testicle worse, but because this disorder renders many persons languid, weary, and averse to anything which occasions the least trouble. Some people also still labor under the opinion that the injections bring on the swelling; and as the loss of three or four days is not of much moment, while absolute rest is a great boon to such patients, it is best to indulge them in it.

As to the monstrous proposal of attempting to remove orchitis by restoring the discharge, I suppose it is now entirely given up and very justly so, being not merely useless in practice, but false even in theory; for swelling of the testicle does not check the discharge—indeed, the same agency which brings on the orchitis often increases the running, probably in much the same way as anything does which disturbs the health, such as a cold, or an attack of influenza; cold, dry, dusty winds; the over-free use of stimulants, etc.

I can safely say that I never saw an unequivocal instance of gonorrhœa arrested by swelled testicle coming on. The patient often thinks so, but one glance is generally enough to show that it is present; and when the two events really occur at the same time, they are simply a coincidence, not cause and result. In the worst case of orchitis I ever had under my care, first the right testicle swelled and then the left. I was not called in

[1] ℞. Liq. ammon. acetatis, ℥ i; Spir. ætheris, ℥ iss.; Mist. camph., ℥ iiiss. M. ft. lotio. Signa. To be applied by means of a single fold of linen, which is continuously wetted with the fluid.

till the latter gland was affected, and then I found not only considerable tenderness, swelling, and hardness of the right testis still remaining, but very evident symptoms of what might fairly be called most severe inflammation in the other, accompanied by visible swelling over the lower part of the spermatic cord. The patient, a strong young fellow, complained of such excruciating pain, especially over the cord, that I could hardly help fancying he exaggerated; but his mother and sisters assured me, that he had been delirious from the pain, and that such a condition could not, in his case, be due, either to stimulants or medicines, for he had done nothing but apply hot linseed poultices, and was extremely temperate. Here I satisfied myself by examination that the discharge from the urethra was still profuse, and the patient said it had been so all through. The reader will find, further on, another case of double orchitis accompanied by discharge.

If any of my readers appeal to authority, and say that in a simple matter of fact like this it is impossible so many excellent observers—numbering among them Brodie, Swediaur, Cooper, Larrey, Wallace, and many others[1]—could have deceived themselves, I meet the objection, first, by asking them to use their own eyes and ears; and secondly, by referring them to Curling, Fournier, and Ricord, who, basing their conclusions on an immense number of cases, have decided against the old doctrine. M. Ricord says[2] that if arrest of the gonorrhœal discharge take place, it is not above once in two hundred times; M. Fournier observes that quite as often as not the discharge is in no way affected; and Mr. Curling,[3] speaking of its suppression, or rather, strictly speaking, metastasis to the testicle, says, it is very questionable whether anything of the kind happens in genuine orchitis. M. Robert, in thirty-eight cases, found the discharge pretty abundant in twenty-six, while it could be detected in every one of the remaining twelve. It may, however, be, and often is, diminished, but that is a different question. It is almost superfluous to say that the patient requires a well-fitted suspensory bandage.

Blistering the Scrotum.—When the swelling and pain continue very obstinate, the surgeon may, at the end of a few days, blister the scrotum. Very alarming pictures of the results to be expected have been drawn; but as I have never met with them, I object to giving up the teachings of experience for the sake of conforming to theoretical objections. I have seen a blister check or limit an abscess of the scrotum when it was almost pointing, and hold such testimony of the action of cantharides to be better evidence than the fears of inexperience.

Several years ago, one of the physicians at the Infirmary of Bishopwearmouth ordered a blister to be applied to the epigastric region of a patient

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[1] Medical Times and Gazette, vol. ii., p. 271. 1871.

[2] Traité Pratique, p. 754.

[3] Op. citat., p. 243.

suffering under great pain in that part of his animal economy. The patient, being told to put the blister upon the epigastric region, and thinking this was only a jocular term for the organs of generation, actually cut a hole in the blister, pulled the penis through, and carefully fastened the vesicant on the scrotum. Two days afterward his landlady came to the infirmary to say that the man was dreadfully ill; and, sure enough, when the surgeon went he was in woful plight, having kept the blister on all this time; but the serious symptoms, which some authors profess to expect from three or four hours' blistering, had not ensued at all!

Regarding the treatment of the blistered surface, I must refer my reader to the section on blistering in the fourth chapter, where he will find full directions.

I wish it to be understood that I do not recommend the above method either as infallible, or as possessed of any marvellous efficacy. So far, and especially as regards the use of ammonia and ether, it has not failed in my hands, and I consider experience warrants me in saying, that it has answered better than any method which I have seen tried, but I do not go beyond this.

Subsequent Treatment.—So soon as ever the symptoms of active inflammation have subsided, iodide of potassium may be ordered, alone or in combination with liquor potassæ, with the view of removing the hardness and swelling. A small quantity of mercury and chalk every second night will often assist the action of these remedies.[1] I suppose it would now be fighting with a shadow to attack the doctrine that the use of iodide of potassium may lead to wasting of the testis; but it may be as well to observe that the credulity with which this doctrine was at once received, and the *ex cathedrâ* style in which it was taught for years *without one person being found to undertake the task of really looking into the subject*, ought, if experience could ever do so, to make men more cautious about adopting tenets on such evidence, or rather on no evidence at all.

I need scarcely say that should effusion of serum take place into the vaginal sac, an accident which has never once occurred in a case where I had charge of the patient from the beginning, puncture must be resorted to. When the effusion is abundant a very fine trocar may be employed; I use one only about twice the thickness of an insect needle. For slighter degrees I have found acupuncture sufficient.

Most of the cases treated in this way have been thoroughly cured; indeed, so far as has been ascertained, success always followed a fair trial, and none of the patients suffered from a relapse—most encouraging results, when we consider how often authors have told us of the tendency

[1] ℞. Potassii iodidi, ʒ j.; potassæ liquoris, ʒ iij.; syrupi flor. aurant., ʒ iv.; tinct. cinnam. co. ad ℥ iv. M. Capiat coch., min. ij. ter quotidie ex aquæ cyatho vin. ℞. Hydrargyri cum cretâ, gr. xij.; pulv. cinnam. compos., gr. viij. M. et divide in pulv. vj. Sumat j. omni nocte.

this disorder has to return under any form of treatment.[1] I do not, however, say it is infallible ; I only say it has succeeded in my hands much better than any other.

M. Castelnau gives[2] a very different account of how matters may go. According to him orchitis may become chronic. After doing well for a time, the improvement suddenly stops, and the testicle even augments in volume ; or the acute orchitis may subside and the patient suddenly find that it has returned. The same parts are affected as in the acute form, except that the spermatic cord is much more frequently implicated. The epididymis is more voluminous, hard, sometimes smooth, more often unequal ; presenting knobs in which the induration is more marked than elsewhere. The testicle is by no means so much enlarged, and appears let into the antero-inferior part of the epididymis which is depressed to receive it. I never yet saw the progress toward cure interrupted by any such symptoms and must conclude that M. Castelnau has confounded syphilitic sarcocele with gonorrhœal orchitis.

Deferentitis.—A case of this is mentioned[3] by M. Gosselin. It occurred on the left side, the swelling being below the external inguinal ring and almost on a level with the head of the epididymis. It was very hard, slightly painful to the touch, and about the size of a big hazel-nut. From it issued, below, a hard cord about the size of a quill, which stretched from it to the tail of the epididymis. From above, another cord, larger than the former, could be traced to the external inguinal ring, and from this to the upper opening of the inguinal canal. The testicle and epididymis were quite distinct. The affection rapidly subsided under the influence of rest, purgatives, and mercurial inunction, and at the end of sixteen days only the slightest trace of it was found.

Inflammation of the spermatic cord without affection of the corresponding testicle, as described by Bergh,[4] Wahrmann and Kohn,[5] I have not met with. In the case of double orchitis previously mentioned this symptom was evidently present in one cord, and, from the patient's account, had occurred in the other. He complained, however, so much of the tenderness in the affected parts that I could not make a proper examination, and he was admitted as an in-patient into another hospital three or four days after my first seeing him. My experience, therefore, of the affection is valueless. I need scarcely remark that great pain near the external ring is in no way uncommon. The symptoms in the case described by Kohn were very severe. A case which seems identical with those just given is

[1] Johnson : On the Genito-Urinary Organs, p. 194. [2] Op. citat., p. 324.

[3] Gazette des Hôpitaux, p. 261. 1868.

[4] Hospitals-Tidende, No. 49, December, 1848. Quoted in the Archiv für Dermatologie, B. I., S. 605.

[5] Wiener medizinische Presse, p. 17. 1870. Quoted in the Archiv für Dermatologie, B. III., S. 58.

mentioned by Hunter.[1] M. Fournier, speaking of this and deferentitis, says[2] he has only seen two instances, but of which he does not precisely specify. At a later date he mentions[3] two instances in which the gonorrhœal inflammation was seated in the vas deferens without the epididymis being affected.

6—7. Phimosis and Paraphimosis.[4]—The treatment of these complications may be summed up in a very few words. Phimosis seldom calls for more than suspension of the penis, which may be easily effected by any person possessed of the most ordinary mechanical skill. In the more severe cases, such as are occasionally seen when ineffective attempts have been made to check the disorder with specific medicines, and which never ensue when injections are properly employed, evaporating lotions containing ether and acetate of ammonia may be used; I have never seen a recent case which required more than these. So soon as ever the prepuce can be drawn back far enough to admit the syringe, the treatment may be continued just the same as if there were no phimosis. It is quite a mistake to imagine that this complication proves the presence of an amount of inflammation which would render the use of injections dangerous. In some long-standing cases it is necessary to act with decision, as I have seen nearly the whole prepuce ulcerated or adhering to the glans. The affair is, however, so simple as scarcely to require any rules at all, and I should not have done more than merely allude to it, had not such an unnecessary amount of words been expended on what every apprentice ought to be able to manage.

When division of the foreskin is necessary the director should be passed under it in the mesial line, and when the point will reach no farther, the skin is drawn well toward the root of the penis. The skin and mucous membrane are then cut clean through to the point. One necessary precaution is not to introduce the director into the urethra and slit up the glans. The reader may think this caution superfluous, but I have known a very good surgeon make the mistake. Mr. Johnson has also seen it happen.[5] Any warty growths found inside may be touched with a strong astringent, such as glacial acetic acid, etc.

Dr. Durkee tells us that phimosis will sometimes yield to gradual distention with a sponge-tent, and a very ingenious friend of mine invented an expanding ring which he assured me never failed to remove the constriction. Mr. Travers also speaks of a dilating instrument invented by Trew. But I apprehend that such measures as these are, like circum-

[1] Op. citat., p. 54. [2] Nouveau Dictionnaire, tome v., p. 214.

[3] Archives Générales de Médecine, tome ii., p. 390. 1877.

[4] The modern spelling of these words seems to me a mistake, the Greek υ having much more analogy with y than with i. However, as scholars like Hooper and Good admit the innovation, anything beyond protest would be superfluous.

[5] Op. citat., p. 136.

cision, suited more for cases in which there is no gonorrhœa to complicate them. There is one complication which I shall advert to presently, in which I think it highly advisable to divide the prepuce at the least.

As to *paraphimosis* little need be said. The surgeon should carefully cleanse the penis, and then attempt the reduction of the strangulated part, in which with a little perseverance he will generally succeed. Some authors, Fricke among the number, profess to have never failed. I have not been so fortunate, and I have seen much better surgeons than myself make the attempt ineffectually. Rollet candidly admits[1] failure. This, however, is not of much importance, as in gonorrhœa, if properly treated, the strangulation, when not neglected, is never severe and rarely attains such severity as to require cutting of the constricting band. If it should, the evil is easily met. In the good old times of Musitanus, once a great authority in those matters, the doctors seem to have made sharp work with the swelling from paraphimosis. The plan was to "humble the crystalline [the swelling] with sublimate," and then touch the affected part with tincture of tobacco, which was "to be done when the patient is lying, lest the Violence of the Pain, because of the violent operation of the Tincture, should make him drop down in convulsions!"[2] Even much later it was quite a common thing to take off part of the organ in these cases.

Dr. Mason Good tells us that in this "variety, amputation of a larger or smaller portion of the penis may be necessary." (!)[3] I must say this is a consolatory view to take of the matter, and the reader, if he ever suffer from paraphimosis, may thank Heaven that Dr. Good is not alive and likely to attend him. Why, in the very worst cases it would be far better not to meddle with the affair, as, when gangrene ensues the utmost that can happen is that the loose part of the prepuce is thrown off. Even this, I apprehend, must be extremely rare. Dr. Durkee[4] speaks of it as a fact "which the medical attendant sometimes witnesses." I have not myself seen it from gonorrhœa.

8. Balanitis is one of the most easy complications to deal with, although some attempts have been made to bring it within the category of complaints requiring extraordinary means. M. Ricord advises cauterization, and if the patient be quite indifferent as to the amount of pain he may suffer, or perhaps rather prefer it, caustic will answer as well as mild lotions of sulphate of zinc in camphor mixture, four grains to an ounce; or sulphate of copper in rose-water of the same strength, syringed under the foreskin two or three times daily, when this is tight, and applied, when the foreskin

[1] Recherches Cliniques et Expérimentales, p. 548. 1869.

[2] Cockburn: Op. citat., p. 246.

[3] When gonorrhœa was considered to be syphilis, the removal of the organ seems to have been a *dernier ressort*. "Amputation of the penis," says Cockburn (p. 224), "has often been the last remedy for the sharp matter of the gonorrhœa."

[4] Op. citat., p. 78.

can be drawn back, by means of a strip of thin linen soaked in the solution used and laid between the prepuce and glans; but according to my experience no better.

Mr. Acton [1] speaks of gangrene as though it was not an unfrequent result of balanitis, and tells us that, though it generally attacks the prepuce, it may destroy the whole penis. M. Robert seems quite familiar with gangrene of the loose fold of the prepuce from this cause. Although for years I saw, quite twice weekly, specimens of the worst class of cases in the Metropolitan and Royal Free Hospitals, I never observed an instance of this.

The occurrence seems to have been common enough when men did not discriminate carefully between syphilis and gonorrhœa,[2] but I should think it must be almost unknown now in good practice. It will, I trust, be unnecessary to say anything about the treatment of posthitis, the elevation of which into a separate subdivision seems to me rather a refinement.

9. Inflammatory Swelling of the Penis.—I should scarcely have been inclined to look upon œdematous swelling of the organ, even accompanied by balanitis, as a very serious affair, and have been disposed to think that rest in bed for a day or two, a sedative, and the free use of tincture of steel, with spirit lotions, were all that is requisite. Some of the French surgeons, however, evidently view it as a symptom of sufficient importance to require the most heroic treatment.

The parts, says M. Melchior Robert, are to be enveloped in linen steeped in marsh-mallow water, elder-flower water, or any other emollient fluid. If there be no reaction, it is not necessary to do more than apply leeches to the groin or perineum; but if the system be seriously affected, blood is to be taken once or twice from the arm. Constipation is to be removed by purgative salines such as seidlitz powders, sulphate of soda, and citrate of magnesia. Along with these we may use warm baths, but not fomentations or cataplasms. The seat of the discharge is to be frequently cleansed with emollient lotions or injections, almost cold, to prevent painful erections. Pills and *enemata* of camphor may be given, and conversation or reading calculated to inspire lascivious ideas (!) is to be strictly excluded. In order to avert gangrene, solution of opium may be injected into the cavity between the glans and the prepuce. All this, however, and several other remedies to boot, such as decoction of mulberry-leaves, do not, it appears, always prevent part of the penis from being destroyed by mortification.

I certainly should not think injecting opium was very likely to stay gangrene, but how this accident occurs at all is more than I can make out. I have seen and treated some rather bad cases of œdematous swelling of the penis, but I cannot call to mind such results as sphacelus, and should

[1] Op. citat., p. 71.

[2] Swediaur: Op. citat., p. 130. Surgical Essays. By Sir Astley Cooper and Mr. Benjamin Travers. Part i., p. 151. 1818.

not feel very well satisfied if they occurred when under my care. Such a complication as erysipelas of the penis and scrotum, which must, I fancy, be very rare, should be met with large doses of tincture of the sesquichloride of iron every three hours, and the application of any innocuous fatty substance, such as benzoated zinc ointment applied, melted, all over the affected part. When it attacks the dartos, free incision is recommended by some authors.[1]

10. Inflammation of the Spongy and Cavernous Bodies.—The reader will find a very good, and rather amusing, account of these affections in Mr. Johnson's work on the genito-urinary organs. They are both intractable enough, but it can hardly be said that they interfere with the cure of gonorrhœa, as they rarely if ever show themselves except when the patient has thoroughly neglected his complaint, and indeed are rather results than complications. They are extremely uncommon, and inflammation of the cavernous bodies is perhaps the most rare of all the sequelæ of gonorrhœa. One gentleman, who consulted Mr. Johnson for it, suffered lancinating pains on erection, and his penis twisted like "a pig's curly tail." It resisted the most energetic treatment, and when last heard of the patient was little if any better. In the fatal case of chordee, mentioned previously, which occurred in the practice of M. Villeneuve, these bodies were implicated. M. Robert, whose account of induration of the corpora cavernosa[2] is very clear and concise, gives an unfavorable prognosis. I have only seen two cases, one of the posterior portion of the spongy body, one of the left cavernous body, both in only a slightly pronounced form. Neither of the patients could be induced to undergo any treatment for his complaint.

[1] The merits of first noticing this affection, and suggesting incision for it, has been ascribed to Mr. Liston, but I believe it is due to Mr. Johnson.

[2] Op. citat., p. 167.

CHAPTER VI.

TREATMENT (CONTINUED).

Complications which Interfere with the Cure of Gonorrhœa.—We now arrive at the consideration of those symptoms which are more calculated to fetter the surgeon's hands. From their importance I have been led to illustrate them by a few carefully selected cases, for which I solicit the reader's earnest attention.

Under this head I propose to place all those affections which directly or indirectly interfere with the exhibition of proper remedies. They consist of—

1. Fainting from the Use of Injections.—In speaking of a strong tendency to faint from the use of injections, I allude, not to the mere sense of faintness felt on passing the tube of the syringe down the urethra for the first time, as that is quite a common affair, but to that form where the disposition is so strong and recurs so constantly as to constitute an idiosyncrasy. I have seen it in very strong men.

An acrobat who had contracted a discharge came under my care. He was a healthy, temperate man, a solid mass of bone and muscle. His energetic method of gaining his livelihood was practised "*sub Jove*," and had developed his powerful frame to the highest pitch of health and strength it was capable of. Yet this man fainted so suddenly on my attempting to insert a short syringe into the urethra, that he fell like a stone. The insensibility was very prolonged, and he felt so ill after it that he refused to have any more injections.

A gentleman consulted me for gonorrhœa. He was a remarkably strong man, exceedingly well made, and wore the appearance of being in very high health; he was fifty years of age, and told me that he had never taken a dose of physic since he was a child, and never remembered having experienced the feeling of being out of health. He had never had a cold, he said, or a headache. The introduction, however, of only the tip of the syringe produced such an effect upon him that he begged of me to withdraw it, as otherwise he should faint on the spot, and immediately after broke out into such a cold perspiration that I saw it would be useless to continue the attempt.

A cavalry officer, a strongly built, hard-featured, resolute-looking man,

consulted me for slight occasional discharge from the urethra, and great irritability of the passage for about half an inch down. I wished to give him two or three injections, and, according to my regular custom, asked him before using the first one if he thought it was at all likely that he would suffer in this way. He seemed quite satisfied that he should not do anything of the kind, but the event showed he was widely mistaken, and that if I had been imprudent enough to repose faith in his assurances he might have been hurt; for I had scarcely got the tip of the syringe into the urethra before he suddenly exclaimed that he was going to faint, and it was as much as I could do to save him from falling heavily. He remained perfectly blanched, sick and prostrate for a considerable time.

I was beginning to inject a gentleman, a strong, finely grown, healthy-looking young fellow. Almost in an instant, as the instrument had entered the urethra, he turned pale and fell almost like a corpse; but, as I have learned to expect this kind of thing, I was enabled to break his fall. The pulse at the radial artery stopped completely. On coming to himself he discharged the contents of his stomach almost at a single gush, and it was a long time before he so far recovered as to be able to leave the room.

In my opinion the surgeon, unless he happen to know the constitution of his patient, should always be prepared for such a contingency; and when he has satisfied himself that there is a disposition to syncope, or even has good reason to suspect it, then he had better give the injection with the patient in a sitting or lying posture. This will overcome the most obstinate disposition to fainting, as the following instance, among many others, may show.

A very tall, delicate young gentleman applied to me with gonorrhœa. About eighteen months previously he had suffered from an attack, which, with all possible care, was not subdued with copaiba and salines in less than nine months; ever since then the urethra had remained extremely tender, and whenever he had a cold, a drop of pus was seen at the meatus on rising. On inserting the syringe he immediately fainted, and as soon as ammonia was applied to his nostrils the contents of his stomach were thrown off; but the impression made upon the disease was so evident that the patient willingly continued the injections, which were given sitting. At the end of eleven days the discharge was so far diminished that they were only given every second day, and then every third till the twenty-fifth, which was the last, no discharge having been seen for eight days. The faintness was present to the last.

Some months later, during an excursion in Austria, he again contracted the disorder; he was treated with specifics and derived almost as little benefit from them as before. Soon after his return to England he contracted a fresh infection, and six months subsequently he had another attack. On both these occasions the complaint was removed within a week by means of injections, but the tendency to faint was still as strong as

ever when beginning with them. After the last gonorrhœa I recommended the use of a gum-elastic bougie twice a week. To the very last day of using it he always averted his sight from the instrument, feeling sure that he would swoon if he looked at it. This treatment, I may observe, answered the end in view; the patient, though he was soon as imprudent as ever, contracted no more gonorrhœas.

2. Great Natural or Induced Weakness.—By this is meant, not so much great physical exhaustion, as a weak, irritable state of the system. The patient is gloomy and weary; sometimes prostrated with sick headaches, at other times scarcely able to rise from mere lassitude. A cold confines him for a week, his bowels are costive, his tongue coated, his enjoyment of all comforts is lost, and he broods and frets over even a slight persistence of his malady.

These cases are often exceedingly difficult to manage. Specifics and potass are sometimes badly borne, and the operation of such remedies as seem suited to the health is unsatisfactory as regards the gonorrhœa. Tonics can only be taken for a little time, as the discharge is apt to become exasperated when their action is kept up for long. Many patients of this class can hardly be induced to take aperients, though positively required; and they are so sensitive to pain, that they shrink from injections which are indispensable. It is impossible to lay down any rules for a system of treatment generally adapted to these cases, as so very much will depend on the complications that arise; but I may briefly state, that the remedies which have succeeded best in my hands are gentle aperients continuously used, tonics, the occasional resort to stimulants and sedatives when there is much prostration and pain, and the persevering employment of injections, which must often, at first, be extremely mild and be aided by blisters. Perhaps, however, the history of a case or two will exemplify the rules of treatment better than any description, and I therefore give two; one in which the disposition to this state seemed to be constitutional, and another in which it appeared to have been chiefly induced by large doses of copaiba.

F. H——, Esq., a delicate-looking man about twenty-five years old, who had suffered a good deal from spermatorrhœa and nervousness, consulted me in the middle of August, 1872, for what he called a slight discharge, which, however, on examination, was evidently enough the beginning of a pretty severe gonorrhœa. His account was that he had had it some little time, but had found scarcely any inconvenience till a few days previously, when a hard pull on the Thames and some pale ale thoroughly developed the complaint. As he was of a highly excitable temperament, acutely susceptible to pain, and already depressed by long-continued emissions and great irritability of the urethra, I restricted the treatment almost entirely to gentle aperients, moderate doses of the acetate of potass mixture and very mild injections. This treatment had nearly subdued the disease,

when he imprudently went down to the sea-side, took a long walk, and indulged in other ways, the consequence of which was an immediate and severe relapse. As the gonorrhœa did not seem now to be influenced by the same remedies as before, I tried the santal-wood oil, in doses of thirty, gradually raised to forty-five and then sixty minims a day, which was as much as he could bear. At the end of three weeks he was no better as regards the discharge, while his health seemed to be decidedly worse, and he was much plagued with the emissions. Tincture of the sesquichloride of iron in full doses was ordered, the strength of the injections was somewhat increased, and a longer syringe was used. The discharge very slowly diminished, and in order to remove it thoroughly, I applied the solid nitrate very gently to the back of the urethra and blistered the penis. These steps brought on a profuse discharge, and great irritability of the bladder; but after a few days the symptoms declined, and there seemed a prospect of his getting quit of his tormenting complaint, when unfortunately, one evening early in December, on alighting from a railway carriage while the station was in almost total darkness, he slipped and violently strained the perineum. He immediately felt that he was badly hurt, and though he attempted for two or three days to continue his duties, he was obliged to take to his bed.

I found him, December 14th, with an irregularly intermittent pulse, coated tongue, total loss of appetite, irritable bladder, profuse urethral discharge, and great swelling of the left testicle, which was also intensely painful and sensitive. His complexion was almost the color of a primrose, his whole frame was bedewed with perspiration, and he seemed extremely agitated; he was also suffering greatly from indigestion and flatulence. He was put on a diet of slops, and ordered at least three glasses of port wine daily, with a glass of hollands at bedtime. Sedatives with stimulants were prescribed, to be accompanied occasionally by a gentle aperient; but his stomach rejected every sedative that I tried, and I was compelled to give these remedies up. Under the influence, however, of the diet mentioned, rest, and carminatives, followed by nitric acid and bitters, his health improved; mild injections were given occasionally almost from the first day, and apparently with benefit. The urine, which at first contained a surprising amount of urates, and a great deal of mucus, had returned to its normal state, the irritability of the bladder had subsided, and the testicle had lessened considerably.

While he was thus progressing he decided to return to his work. I totally refused to sanction such a step, as the weather was raw and cold. In less than a week, January 26th, I was again called to him and found a complete relapse. The other testicle was swelled and very painful; there was great pain in the perineum and bladder on making water; the pulse was intermittent, the tongue coated, the stomach rejected food; he was sleepless and excited, and suffered occasionally from headache, which was

described as "frightful." Sedatives were again tried, bimeconate of morphia, hydrochlorate of morphia, solid opium, hyoscyamus and chlorodyne being ordered in succession, but none of them agreed with him. The same treatment as before was therefore substituted and the injections were resumed, the fluid being carried to the neck of the bladder. The membranous part of the urethra was intensely sensitive; otherwise he bore the injections very well. Having just then received a communication from a patient in India, stating that he had been cured of an obstinate gleet by painting the perineum with tincture of iodine, and taking small doses of iodide of potassium, I determined to try these remedies in the present case, though I had, years ago, used them several times without any benefit. Here, too, they failed to produce any impression on the discharge, and the patient begged me to desist from employing them, as it seemed to him sheer waste of time. The iodide was, however, continued, but in tolerably large doses and in conjunction with the liquid potassæ and bitters, while the injections with the long syringe were kept up. He rapidly improved, and on March 8th he returned to work, having been for some days quite free from every symptom, except a slight hardening of each epididymis and the occasional appearance of small shreds in the urine, for which he was directed to pass a soft bougie twice a week. As the nocturnal emissions still plagued him occasionally, I prescribed the tincture of the sesquichloride of iron. On March 20th he called to report that there had been no return of the discharge and that his health continued to improve.

In another case the patient was a member of the medical profession, who placed himself under my care, after having made a most unsatisfactory attempt to treat his own complaint.

I found him low, weak, and dejected; he was suffering under enlarged prostate, with a painful bearing-down, as if the rectum were coming out, so that when walking he constantly felt an urgent desire to keep his hand pressed upon the anus. There was a moderate amount of discharge, with no great pain in making water or during erections. The tongue was brown, furred, tremulous, and indented by the teeth—the breath was foul—his face looked coarse and dusky—he said he had lost all his color along with his appetite and strength. Great part of his sufferings he attributed to the amount of copaiba he had taken; and, as according to his own estimate, he had for some time past managed to get down five ounces a week, the supposition was very feasible. The use of these preposterous doses was always followed by nausea and loose stools. To complicate the case still further, it appeared very doubtful, from the patient's description, whether there was not some stricture to be apprehended, as six years previously he had suffered under gonorrhœa, which, after having been duly treated with copaiba, slowly changed to a gleet, and this in its turn every now and then reappeared; so often, indeed, that I doubted if it had ever been cured. Latterly, also, there had been a good deal of dribbling after

making water, and, the patient thought, some slight narrowing of the stream. Patient intensely irritable and gloomy.

On examination by the rectum, the prostate was found greatly enlarged, and a blister was ordered to be applied to the perineum. A bougie was also passed, and a most irritable state of the urethra discovered ; no stricture, however, was encountered. Within forty-eight hours after this operation the right testicle swelled in an extraordinary way. The patient could not allow me to touch it, and the attack was accompanied by such prostration that he was obliged to confine himself to his room. Morphia in large quantities was ordered, and relieved him so rapidly that he said, "he could hardly describe the comfort this dreamy, quiet state inspired, compared with his first night's suffering." Hot water to the scrotum so as almost to excoriate it, a well-fitted suspensory bandage, a brisk aperient, and a diet from which all cold, ascescent, heavy articles of food were rigidly excluded, soon relieved all the most severe symptoms.

At the end of a week I examined the testicle ; and though this was one of the worst cases of orchitis I ever saw, I was not prepared to find such evidences of active disease. The epididymis was greatly enlarged and of almost *cartilaginous* hardness, *as was also great part of the testicle ;* and though all pain was gone, yet the patient still shrank instinctively from the slightest touch. I now asked him if he had ever strapped the testicle for orchitis, and if he would like to go through the process. He at once admitted that he had performed the operation, but he entirely objected to having it done on himself, and I very strongly suspect that many advocates for strapping might, under similar circumstances, give much the same reply.

The discharge was now treated with mild injections of nitrate of silver, followed by the use of gum-elastic bougies every second day. Two blisters were applied to the perineum and two to the penis. Iodide of potassium was given in doses of ten grains twice a day ; calomel and black draught twice a week. A full meat diet was ordered, and a bottle of claret daily.

The discharge soon ceased entirely. The urethra became so healthy that the bougie could be passed with scarcely any discomfort. After the first three weeks the prostate gave him no further annoyance ; and finally such a steady subsidence of the hardening of the testicle ensued, that when he paid me his last visit, about four months from the beginning, little more than a slight thickening remained to mark the seat of disease. His tongue became clear, moist, and firm—his appetite returned, and he soon gained flesh and strength. From having been unable to walk a mile without fatigue, he was now almost as well as he ever had been, and in better health than he had enjoyed for years.

Another case in which the weakness, partly natural and partly acquired, materially interfered with the treatment, will be found in the section on strong tendency to stricture.

For the most part the weakness induced by long-continued use of copaiba is easily remedied. The first step is, of course, to give up the use of the balsam itself; after this almost any mild preparation of iron, such as the citrate, conjoined with some simple aperient, will soon remove the effects.

3. Tendency to Inflammation of the Lacunæ of the Urethra.—However hazardous the statement may seem, that inflammation of the lacunæ rarely—perhaps never—ensues under the use of the treatment recommended for simple gonorrhœa, provided this has had time to act before the lacunæ are involved, I believe I am warranted in making it; but whether it ensues or not, the treatment of the parent disorder, on the system mentioned in the foregoing section, may be safely pursued, even though the previous experience of the patient is that this complication will follow.

A surgeon, at that time a student, placed himself under the care of Sir Astley Cooper for gonorrhœa. The great surgeon ordered him an injection of nitrate of silver, five grains to an ounce. The inflammation and pain, however, became so unmanageable that he was soon laid up with orchitis and abscess of the lacunæ. The latter burst externally, leaving a fistulous opening, which healed in a few weeks, and a gleet which lasted ten months. Subsequently he had a second attack, which healed in four months by means of copaiba and injections; this time also the follicles suppurated. He contracted a third gonorrhœa, and treated it himself with small doses of copaiba and cubebs, which purged and nauseated him so much that he was quite prostrated. Dyspepsia and total loss of appetite came on, making him so irritable and weak that he could not mount his horse or attend properly to business; within a fortnight three of the lacunæ had run into suppuration and one had burst externally. He then consulted me. A mild saline aperient, with full doses of morphia at night, was ordered, along with sulphate of zinc injections; subsequently quinine and purgatives were given, and blue ointment was directed to be rubbed over the follicles. He speedily improved, no more lacunæ suppurated, the discharge rapidly subsided, and in a few weeks gave way entirely.

But I have seen very troublesome results indeed where the case was treated differently, and I believe most of the cases recorded of suppurative inflammation in the cellular tissue of this part owe their origin to disease beginning in the lacunæ.

E. E——, Esq., came under my care for gonorrhœa. He had been suffering under it for several weeks. A small abscess had formed on the right side of the penis, about two inches from the mouth of the urethra. The abscess was pointing, and burst within three days from my first seeing him. The urine began almost directly to pass through the opening, and continued to do so. It was difficult to imagine any reason why the patient should suffer in this way. He was a spare, strongly built man, of unusually

active, temperate habits, and extremely healthy. He had used no injections and seemed to have been treated principally with antiphlogistics and a few small doses of copaiba. While under my care injections of nitrate of silver, the solid nitrate of silver, blisters, etc., were all tried in vain. At last, by applying the actual cautery and the acid nitrate of mercury to the interior of the fistula, I succeeded in reducing it to a very narrow passage, and, that done, I speedily brought down the urethral discharge to a mere gleet; but I could not completely cure either, and while I was contemplating further steps, the patient was compelled to leave for a journey into Russia.

About a year after this, while still abroad, he again contracted a discharge, which seemed to have been treated in much the same way, except that copaiba was given more freely, and, along with it, cubebs. As the case grew much worse, he set out for England, but broke down before he got quite through Germany, and was laid up for a fortnight with great swelling of the penis, pain, and uneasiness of the organs generally. Directly he reached London he came to see me. The body of the penis was considerably swelled and persistently hard. In addition to the old sinus, through which the urine still passed, two new ones had formed at the junction of the lower surface of the penis and scrotum. From these radiated several passages backward under the scrotum, and forward under the skin of the penis, and though the probe could not be introduced into the urethra, the dribbling through these sinuses, every time the patient made water, showed that there was a communication between them and the canal.

For several weeks I tried everything I could think of to heal these fistulæ. Dilatation of the openings, the application of the acid nitrate of mercury, of the actual cautery, and of a strong solution of cantharadin in glacial acetic acid, were repeatedly used, but to no purpose; while the gonorrhœa remained unaffected by blisters, injections, and the use of the solid nitrate to the interior of the canal. The thickening and induration of the penis and scrotum got worse, and the sinuses evidently increased in extent; some of the skin, too, on the lower part of the penis was on the point of sloughing. At last, in a consultation with my friend, Mr. T. Carr Jackson, it was decided to put the patient under chloroform and lay open the sinuses. This was done with the result of laying bare five fistulous openings into the urethra, and such a mesh of burrowing passages as has seldom, I fancy, been paralleled. Mr. Jackson said he had never seen anything like it. I was compelled to remove some of the skin of the penis, its vitality being so compromised that there was no chance of saving it. Some weeks after the patient again left England, at which time not one of the openings into the urethra had healed. He subsequently wrote, however, from East India to say that he was a great deal better.[1]

[1] Mr. Johnson had also a patient under his care who had gonorrhœa several times, and on almost all occasions the lacunæ suffered more or less. Op. citat., p. 183.

Mr. Phillips seems to have been as fortunate here as in stricture. "I have," he says,[1] speaking of this complication, "adopted a treatment from which I have experienced the greatest success. I apply the lunar caustic to that portion of the urethra in which the interior orifice of the fistula is situated." The reader has just seen with what success I applied it, and I repeatedly touched not only the orifices, but also the sinuses themselves and adjoining parts of the urethra.

Mr. Lee, as I understand him, thinks that these abscesses begin in the areolar tissue surrounding the urethra, and this view is supported by the observations of M. Lagneau, *fils*,[2] who, speaking of three cases, in two of which the purulent collection was seated near the frænum, and in one just before the scrotum, considers the peri-urethral tissue most likely to be their seat, because they did not impede the passage of the urine, projected outward, and opened exclusively on the outer surface; grounds which do not seem to me conclusive, as closing of their urethral orifices and distention are not essential steps in the process.

4. Morbid Sensibility of the Urethra.—In excessive *natural* tenderness of the urethra it is sometimes necessary to wait a day or two in order that the action of the potass[3] may be set up, and to give a sedative every night, before beginning with injections. The first two or three of these may consist of warm water; the next of weak solution of nitrate of silver, beginning in some persons as low as one-tenth of a grain to an ounce; after this no farther precaution is necessary. Where this extreme sensibility seems dependent upon rheumatism or gout, a grain of the extract of colchicum every night may be serviceable. I speak doubtfully, however, and more out of deference to tradition than as the result of experience, for I myself never saw the least good from the practice.

In most cases, after this difficulty is overcome, the injection may be increased in strength as with other patients; but, on the other hand, there are many persons who can never bear injections stronger than a grain to the ounce without feeling severe pain. One gentleman, under my care, complained of much uneasiness, lasting for several hours, with heat and swelling of the penis, from a solution of two-thirds of a grain to the ounce, and noticed these symptoms very perceptibly when the strength was reduced to the eighth of a grain. Now *it is never necessary to give severe pain.* If the patient is only seen when the gonorrhœa itself is declining in violence, I would recommend free bathing of the penis with hot water two or three times a day; the application of veratrin ointment, five grains to half an ounce, to the under surface of the urethra; and the use of gum-elastic bougie.

In some cases of *acquired* morbid sensibility of the urethra behind a stricture, both of them the sequelæ of gonorrhœa, the nitrate gives ease

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[1] Op. citat., p. 289. [2] Gazette Hebdomadaire, p. 343. 1862. [3] See p. 124.

where the most delicate touch of the bougie is not borne. I had under my care a case thus originated, where I was for some time entirely foiled. The patient suffered little discomfort from the application of caustic to the stricture, and he scarcely complained at all when I expanded the contraction with a straight screw dilator which I use; but, though a resolute man, he always shrank so from the contact of the point of the instrument, and even of the softest bougie, with the urethra behind the stricture, that I was obliged to desist. At last I passed the nitrate right through the stricture to this tender spot and used it pretty freely. The patient suffered little more than from the bougie, while the abnormal sensitiveness was so completely removed that, though I employed both dilator and bougie on several subsequent occasions, he never complained. The instrument for applying the nitrate in this way, as also that used for stricture, will be described in the next section.

5. Strong Tendency to Stricture—that is, where the canal begins to contract within a very short time after the first appearance of gonorrhœa—though not very uncommon when this disorder is neglected, has only occurred in my experience three times in cases treated properly with potass and injections. In two of them it yielded quickly enough to the solid nitrate applied by means of the sheath and stylet to be presently described. In the third case the patient, quite a lad, with a first and pretty sharp gonorrhœa, was suddenly despatched on business which enabled him to indulge in the pleasures of the table to any extent he liked. Not having enjoyed such a privilege before, he made the best use of it now—lived on game, salmon, champagne, punch, etc., and returned to London with the urethra closely strictured for about two inches—a state of matters which required about eight months to set right again.

A slighter degree of this disposition may, when accompanied by great constitutional weakness and impaired health, also give a great deal of trouble.

C. F——, Esq., a thin, extremely delicate-looking man about twenty-seven years old, consulted me March, 1874. His account was that he had inherited a very feeble and excitable constitution, with a morbid dread of pain, and that he had resided a considerable time in Jamaica, where he had contracted intermittent fever, from the effects of which he had never recovered. Some considerable time before his visit to me he had been infected with gonorrhœa, which, though never severe, and treated by his medical attendant with great care and skill, had lasted six months. Although the discharge had ceased there was a sensation of tenderness and uneasiness in the posterior part of the urethra, which showed something was not quite right, and it was for this that he came to me. I advised him to pass a bougie once a week and to take a tonic, but he neglected to do either, and I saw no more of him till the beginning of June, when he came to be treated for a rather active gonorrhœa which he had caught quite recently.

He was put on preparations of potass and gentle aperients, but, owing to his excessive dread of pain, I had great difficulty in gaining his assent to anything in the shape of injections. He was imbued with an utter horror of even the slightest operation. Vaccination, he said, had made him faint. However, after a little while I succeeded in carrying the point, with many stipulations on his part that the injections should be very mild, and that the point of the syringe should only just enter the urethra, the latter condition being one which I took the first opportunity of evading. The discharge was gradually brought down to a very slight affair, and then the improvement came to a stand-still. I now tried the sandal-wood oil, which the patient took with great regularity in quite half-drachm doses three times a day for some time. He was most anxious to get well, and I believe implicitly followed out every direction given him. The oil seemed to produce some improvement, and then there was a relapse and another stand-still. As he was extremely low, with a weak, small pulse, I did not much like going on with the medicine and prescribed him quinine, followed by steel, with blistering. This, however, effected no particular good as regarded the discharge, which did not get quite well.

From the beginning I had warned the patient that the stricture, which I fancied was springing up in consequence of the first gonorrhœa, would be aggravated by the present attack, and when I saw that the means employed were not bringing about a cure, I advised him not to waste any further time upon them, but to let me pass a bougie. Of this he would not hear unless he was put under chloroform, to which I most reluctantly consented, and he was accordingly chloroformed four times. He was however so refractory, declaring he should die if his hands were held, and then, when they were set free, snatching the inhaler from his mouth, that three times no real insensibility was produced, and he foiled all attempts to explore the urethra. Once only he was fairly brought under the influence of the anæsthetic, and then the insensibility became so great, that the surgeon who gave the chloroform grew alarmed, and I could do no more than satisfy myself that there was some contraction about five and a half inches down, a number six passing with moderate ease.

As chloroform was of no use, he was put under laughing-gas. I then passed down an armed number eight bougie, and as it would not go through the contraction just spoken of, pressed it sufficiently long against the narrowed spot to act thoroughly. The patient suffered very little after-pain, but the discharge remained as before. The sandal-wood oil was again tried, in as large doses as his stomach could bear, and again failed. He also took matico, in which he had great faith, with as little effect.[1] As he still shrank from the only step likely to be of service, the use of the bougie, except under chloroform, which I refused to employ, I advised him to blister

[1] See page 83.

again, and to accept an invitation sent him to spend a few weeks at the sea-side. He went down and, while there, blistered four or five times, he could not exactly recollect which. His health improved considerably from the change of air, and an impending attack of intermittent fever passed off; but the discharge continued so entirely unaffected, that at last he made up his mind to have the bougie used, which, however, owing to my own absence from town, could not be begun until near the end of October. Meanwhile I directed him to give up the dilute phosphoric acid, which had been ordered for the symptoms of fever, and to take, instead of it, the tincture of sesquichloride of iron, which he did, and reported, when I next saw him, that he had gained both flesh and strength from the use of the latter.

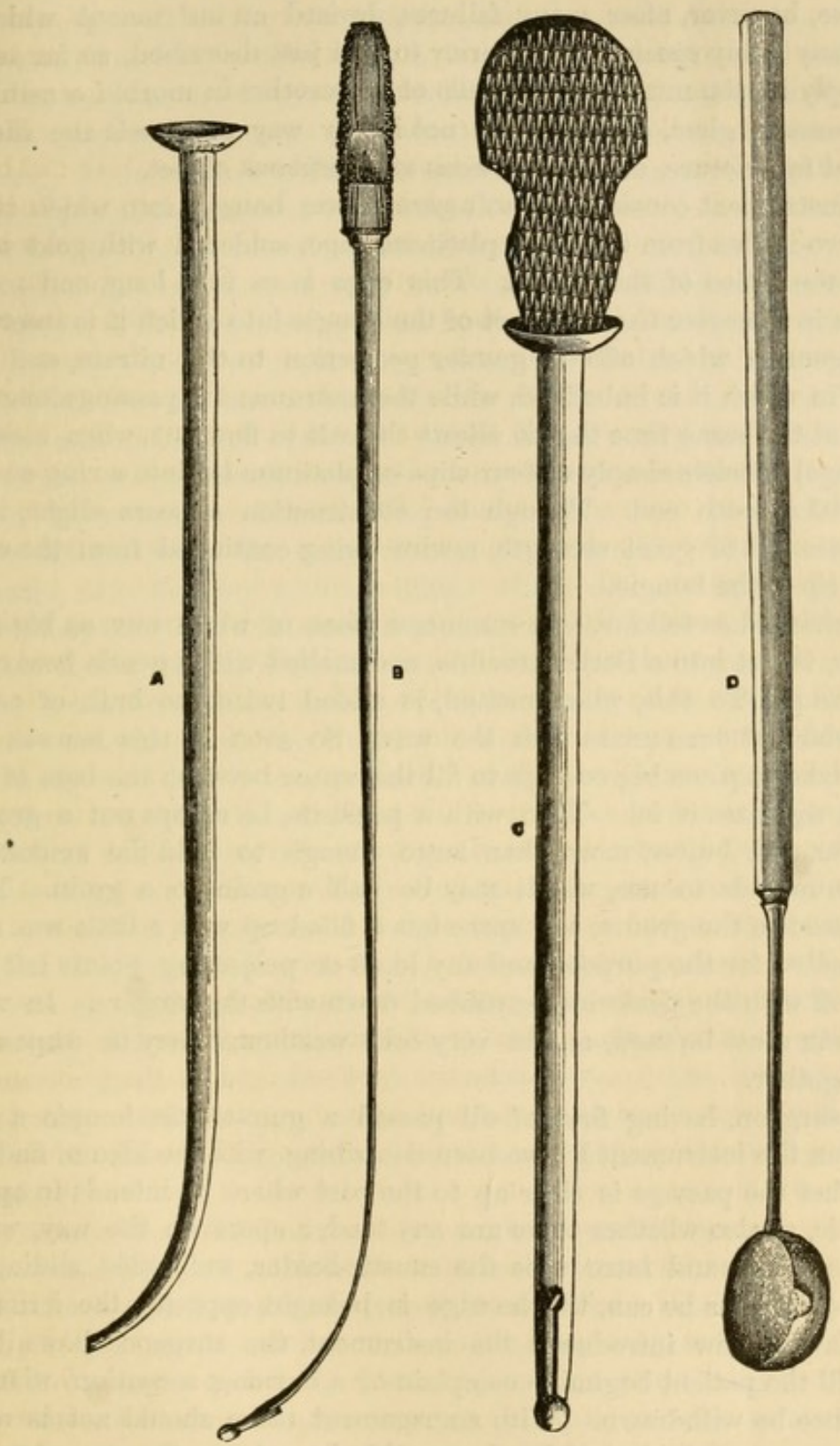
On my return from London the employment of the bougie was commenced, and with this began the first real improvement in the case. The stricture yielded slowly but steadily, and directly this change showed itself the discharge lessened. At first there was always some slight bleeding after even the most gentle passing of the instrument, but this was soon checked by the internal use of tannin. The patient had at one time suffered, though not very badly, from chordee, the annoyance being rather persistent than severe, and this the bougie only relieved slowly. By the end of the third week of December the discharge was practically extinct, and the urethra dilated to its natural size. During the first few days of the sudden thaw which took place in the beginning of January, there was an apparent relapse, possibly due to the patient having caught a bad cold, but the discharge was different from what I had ever seen it in him, being thin, not at all viscid, and of a pale, dirty yellow. I pronounced it not to be gonorrhœal, and under the use of a drachm of tannin daily it went away almost as fast as it came. On the 25th of March he reported that, for thirty-seven days he had not perceived a speck of discharge in the urine, which he always scrupulously examined at least once daily.

During the whole time the patient was under my care I believe he never omitted to take a single dose of the medicine ordered for him, nor had I ever reason to suspect that he transgressed against the suggestions made to him about remaining quiet and abstaining from stimulants; yet the disease lasted nearly seven months. Possibly the stricture was the chief cause of this persistence, but his morbid dread of pain was the cause of the stricture remaining so long unrelieved, and his first attack, with which stricture had nothing to do, lasted six months.

Caustic-holders.—The instrument[1] just spoken of and displayed in the engraving consists (1) of a platinum or silver canula, *A*, shaped like a No. 9 catheter with the blunt end cut off, and a pea-headed stylet, *B*. It is passed down, with the stylet in, to any part of the urethra that seems very

[1] The larger instrument is reduced almost one-half, the smaller one a fourth. The drawing of the ladle is of the actual size. The instruments are made by Messrs. Walters & Co., Moorgate Street.

tender, and the stylet being withdrawn, a small flexible bougie, armed by dipping the tip into caustic fused in the ladle, *D*, is introduced through the canula and drawn lightly over the urethra for an inch or two. It is



then drawn back within the stylet while the instrument is removed, so that only the part the surgeon wishes to cauterize is brought into contact with

the nitrate. *C* represents a smaller instrument of the same kind sheathed, to be used when the seat of morbid action is nearer the mouth of the urethra.

I have, however, after many failures, devised an instrument which I think I may safely speak of as superior to that just described, so far as regards applying the nitrate to the walls of the urethra in morbid sensibility of the passage, gleet, etc. It does not in any way supersede the sheath and stylet in stricture, and indeed aims at a different object.

The instrument consists of a soft gum-elastic bougie, into which is inserted, two inches from the tip, a platinum cage, soldered with gold so as to resist the action of the nitrate. This cage is an inch long, and somewhat less in diameter than the part of the bougie into which it is inserted, an arrangement which affords greater protection to the nitrate, and the material in which it is imbedded, while the instrument is passing along the urethra, at the same time that it allows the salt to flow out when melted. It (the cage) consists simply of four slips of platinum let into a ring of the same metal at each end. Though the construction appears slight, it is really possessed of great strength, a wire being continued from the cage over the tip of the bougie.

It is charged as follows. In summer a piece of white wax, as big as a small pea, is put into a Berlin crucible, and melted with a gentle heat over a spirit lamp. To this, when melted, is added twice the bulk of cacao butter, which at once mixes with the wax. So soon as this has set, the surgeon takes a piece big enough to fill the space between the bars of the cage and squeezes it in. Then, with a penknife, he scoops out a groove in the wax and butter, more than large enough to hold the amount of nitrate he intends to use, which may be half a grain to a grain. This being placed in the groove, any space left is filled up with a little wax and butter melted for the purpose, and any loose or projecting points left are scraped off with the penknife, or rubbed down with the fingers. In winter less wax must be used, and in very cold weather it may be dispensed with altogether.

The surgeon, having first of all passed a gum-elastic bougie a size larger than the instrument I have been describing, with the idea of finding out whether the passage is clear up to the part where he intends to apply the caustic, as also whether there are any tender spots on the way, withdraws the bougie and introduces the caustic-holder, well oiled, sliding it along as quickly as he can, till the cage is brought opposite the irritable part. Having now introduced the instrument, the surgeon allows it to remain till the patient begins to complain of a burning sensation, when it may at once be withdrawn. With management there should not be anything like severe pain, but if by chance this be set up, the use of a hot bath at 98° or 100° Fahr. for two or three minutes, and a good sedative, such as a dose of Battley's solution in an ounce of the brandy mixture of

the pharmacopœia, will generally relieve it in a short time. Or, instead of a bath, the patient may bathe the perineum well with hot water, but this, if more convenient, is less efficacious. In my own practice I have rarely known either called for. Sometimes a little purulent discharge, or a slight degree of bleeding, follows even a very gentle application of the caustic, but the surgeon may quite safely leave this to itself, and repeat the application from two or three to several times, as the case is more or less severe. If there be no particular tenderness, the caustic may be applied to the prostatic portion of the urethra.

The advantages offered by this instrument are, its small cost, which is not more than half that charged for other caustic-holders ; its simplicity, all screws, stylets, etc., being done away with ; its safety, the strength of the materials being so great that a strong man could not drag them asunder, while they are not acted on by the nitrate as in Lallemand's instrument ; and finally, the ease with which it can, owing to its softness and elasticity, be introduced even into a very sensitive urethra.

6. Retention of Urine.—This complication may very well be taken here, though really its more natural place would be in the preceding chapter, as it belongs to those things which do not, materially at least, interfere with the treatment of the gonorrhœa. I have not often seen it except in the case of a patient who, with a previously existing stricture from gonorrhœa, had contracted a fresh attack of the latter disease ; in these instances, too, the immediate attack of spasmodic stricture has generally been traced to a debauch, though sometimes it arises from long exposure to cold and wet, one of the worst cases I ever saw following upon a walk of some hours through a snow storm. One patient, not suffering previously from stricture, brought on the contraction at the very outset of the gonorrhœa by passing a bougie four times in one day, setting up a degree of spasm which took four or five months to overcome. In addition to this M. Mauriac recognizes[1] a progressive and incomplete retention, generally due to the inflammation having reached the membranous or prostatic urethra, seen usually in irritable subjects, persons suffering from catarrhal "urethrorrhœa," contracted by connection with the female just before or after the menstrual period, a complaint with which I am not familiar.

Treatment.—When such a thing can be procured the patient should at once take a hot bath, quite 100°—higher if he can bear it. Very often this will suffice, and it almost always affords some help, but it should be accompanied by a full dose of laudanum or Battley's sedative ; and unless this speedily overcomes the obstruction the catheter should at once be resorted to. On the whole no instrument has answered so well in my hands as a moderate-sized or small gum-elastic catheter, which I almost invariably

[1] Progrès Médical. Quoted in London Medical Record, p. 335. 1880.

use without a stylet. Mr. Savory strongly praises[1] chloroform in spasmodic stricture; he also remarks that the action of a brisk aperient will often cause a passage of urine.

Sometimes a gonorrhœa supervenes upon an old stricture. The gonorrhœa is cured or reduced to a slight gleet, but so soon as ever a bougie is passed to remove the stricture the discharge returns. I have tried pretty well every variety of treatment, and consider on the whole that embodied in the following paragraph as the most satisfactory.

7. Balanitis occurring along with Phimosis and Stricture.—If there be, along with the state of matters just described, balanitis and phimosis, the prepuce should forthwith be divided, unless the patient will permit of circumcision being performed, which is still more effectual. This step speedily disposes of both the latter complications, the balanitis requiring little, if any treatment after the operation has been performed. The next thing is to reduce the gonorrhœa to a minimum, for according to my experience it is rarely cured at this stage, by means of very mild injections of nitrate of silver. So soon as ever this is done the solid nitrate should be applied to the stricture, and nothing further need be attempted till this is set right. With the removal of it, the gonorrhœa I believe invariably disappears of itself. The bougie may be tried instead of the nitrate, but my essays with it in such cases have been unsatisfactory, whereas it is scarcely exaggerating to say that the nitrate, though applied only to the contraction, acts with almost unfailing certainty on the whole seat of the running.

8. Excessive Irritability of the Bladder.—Sudden and almost irresistible irritability occurs at times in very healthy persons, often when the gonorrhœa is yielding to the influence of medicines; but there is also an extreme and rare form which is encountered in delicate persons, and appears to arise from the gonorrhœal inflammation extending back within the first few days of its existence to the bladder. It is sometimes accompanied by a strong tendency to evacuate the bowels on administering a urethral injection.

Notwithstanding all my attempts, I have failed to discover any remedy on which we can rely in this variety of irritable bladder, which, however, is not often met with. I have tried every means recommended in standard works for the form usually seen, along with most of our sedatives and antispasmodics, such as sumbul, chloroform, etc., with no good result. On the contrary, I found the ordinary remedies so injurious here that I soon abandoned them in favor of *tonics* (using mild sedatives merely as an aid), an antacid purgative, such as a dose of Henry's magnesia or the effervescing citrate, and the steady use of injections. The following history will, I hope, exemplify this class of cases better than any formal description:

[1] St. Bartholomew's Hospital Reports, p. 29. 1868.

A gentleman engaged in speculations of a very hazardous nature, and subject in consequence to all the variations between the extremes of excitement and depression, consulted me respecting a gonorrhœa which he had just contracted. As he seemed very irritable and nervous I inquired into his history, and found that, after having been long in indifferent health, he had two years before been attacked with influenza, for which he placed himself under the care of a well-known physician.

The disorder slowly gave way, but he had never regained his flesh and strength ; his digestion was impaired, his appetite capricious, bowels often costive, urine loaded with phosphates and mucus, tongue coated and marked by the teeth. He was haunted by a feeling that he was growing smaller, which, he said, in spite of its absurdity, he could not shake off. The discharge from the urethra was thin, yellow, and profuse, much like that occasionally seen without any manifest cause in elderly men. There was no particular uneasiness about the parts of generation ; no pain in making water, chordee, or swelling of the prepuce. The discharge had appeared only two days previously.

A mild saline aperient was ordered, and, as the patient was very timid, only a weak injection was employed. In a few days the irritability of the bladder became so excessive that the injection was instantly thrown out again with a little urine, and the patient had to make water three times in the first half hour after. This state continued to a certain extent up to a late hour in the evening. He was ordered meat and a glass of port daily, quinine and sedatives were given, and as it was found that the occasional use of brisk cathartics induced much less irritability of the bladder and rectum than the mild aperients had done, they were substituted. Injections of nitrate of silver, however, were principally relied on to remove the discharge.

The first effect of these was to increase the irritability of the bladder for an hour or two after using them, when it quickly ceased and did not return till the injection was repeated the next day. Having syringed out the anterior part of the urethra, the tube of the long syringe was passed down, and when withdrawn pus was found adhering to its point. The long syringe was therefore substituted for the short one, and the injection was gradually raised to the strength of ten grains to an ounce ; an amount I have often found necessary whenever it was requisite to apply injections low down. This alteration had the desired effect ; the discharge diminished steadily, though it did not entirely disappear for six weeks. The irritability of the bladder grew gradually less, but to the very last the patient was always compelled to sit down immediately after an injection ; and hence as the remedy was continued occasionally for some weeks after, it may be assumed that the irritability endured, in all, full ten weeks in a rather severe form. There was no relapse, the patient gained flesh and strength under the use of quinine, and married soon after.

9. Inflammation of the Bladder.—This rare complication, when it does happen, generally attacks the neck of the viscus, but whatever be the part assailed, it should, I think, be treated in the same way. The prompt and liberal use of sedatives, hot bathing, the application for a short time of a hot turpentine stupe over the pubis, and a diet of slops, from which wine is not necessarily excluded, are the most suitable of the means with which I am acquainted. Any direct applications are, I think, even when the more formidable symptoms have abated and the affection seems entering upon a chronic state, better suspended. As a rule, the symptoms almost invariably, if not in every case, decline under the influence of these measures, and those recommended for irritability of the organ. The employment, too, of some of the substances of which the injections, recommended by certain authors for this symptom, are composed, seems to me as much calculated to endanger the patient's life as to cut short the course of the disorder. M. Robert mentions[1] most serious results as having arisen from an injection of cold tar-water. A case of acute cystitis from gonorrhœa, treated with "balsams" and Van Swieten's fluid, ending fatally, in the practice of M. Guilvac, is mentioned in the *Giornale italiano*.[2] After death it was found that perforation of the bladder had taken place. Brodie says[3] that when, in acute inflammation of the bladder, the urine remains acid, and the sediment which it deposits is yellowish, having no adhesive property and being apparently purulent, the patient will often derive benefit from two grains of calomel and half a grain of opium two or three times a day; when it is alkaline, he has known much good arise from the use of vinum colchici, fifteen to twenty minims three times daily, for three or four successive days.

10. Excessive Irritability of the Rectum seems principally due to the sudden and irregular distention of the urethra by the injection. I injected a gentleman with solution of nitrate of silver for a gleet which had been treated with chloride of zinc injection and copaiba; he was compelled to make a precipitate retreat to the water-closet. The next day I made the injection quite weak, although the first had occasioned no great pain; the irritability of the rectum was still as great. I then used the caustic plug described at page 134; this did not induce any irritability of the rectum, and four applications removed the discharge. It came back a little, and he never summoned up resolution again, saying that "for a mere drop of discharge it was not worth the trouble."

11. Perineal Abscess.—Of gonorrhœa accompanied by this complication I cannot give so favorable an account, not having found it so amenable to treatment as might have been expected. Fortunately enough, it is rather rare.

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[1] Op. citat., p. 91.

[2] An. viii., p 302. 1873. Quoted from the Bordeaux Médical.

[3] Works, vol. ii., p. 463.

It is laid down as a rule of treatment that leeches, antimony, calomel, and black draught should be exhibited for this affection. Those who have succeeded, with these remedies, in checking the progress of perineal abscess, have had better fortune than has fallen to my share, as they have never appeared to me to exert any material influence over its course.

The only remedy from which I have ever found benefit arise is the potassio-tartrate of antimony in large doses, aided by the application of water at nearly scalding heat to the perineum, and sometimes the free application of the nitrate of silver to the surface.

In six cases out of eight in which I collected the histories, and had an opportunity of tracing them to their close, a complete though slow cure of the abscess took place; the gonorrhœa, however, proved more difficult to subdue than in most other cases. In the seventh the patient, just as the abscess was a little improved, gave up the medicine in disgust, and soon returned with a larger and more painful swelling. This was also subdued by the use of antimony; but though he attended regularly, the urethra long felt hard and tight at the seat of the abscess, and a gleety discharge remained which proved very intractable. On passing the bougie the canal did not appear much narrowed, but it was somewhat twisted and peculiarly hard and inelastic; there was also considerable dribbling after making water. More than a year after this I met him, when he informed me that he had had no return of the gleet, but the uneasy feeling of hardness was still there.

The eighth case was that of a gentleman in whom the abscess had been checked, eighteen months previously, by the heroic use of leeches, poultices, etc.; since that time the discharge had never diminished, and was now thick and yellow. He had taken large quantities of medicine, principally copaiba and cubebs, but without any result, except that of increasing disgust for "all physicking." For three or four months he tried blisters, aperients, and short syringe injections with unwearied perseverance, but with no effect. I wanted to cauterize the urethra and use bougies, but he said he had suffered so much that he could not bear the idea of more instruments. At last he permitted me to introduce a gum-elastic bougie; on reaching the seat of the abscess, the urethra was found excessively tender and irregular. Three years subsequently he again consulted me for two confirmed and very tight strictures of the urethra, one of which was only an inch and a half from the orifice. He had for some time always carried a small bougie, which he occasionally passed a little way down. The discharge had never ceased; his health seemed quite broken down, and he presented a melancholy picture of a constitution never very sound, now to all appearance ruined for want of resolution to undergo a mild operation. He still persisted in refusing to allow bougies to be used. Subsequently I attended him for complete retention of urine, and succeeded in passing a No. 2 catheter with the greatest difficulty, just as the symp-

toms had become too serious to admit of further delay, and after I had resolved, if this failed, to pierce the bladder from the rectum. Although he knew in what jeopardy his life had been placed, and though strangely enough his brother died about this time from stricture, he seemed after his recovery to grow more indifferent than ever.

These cases, coupled with others which I could not watch so completely, quite impressed me with the conviction, not only that perineal abscesses should be attacked with the utmost vigor, *but also that the treatment ought to be continued till the hardness has disappeared.* Subsequent experience has enabled me to verify this opinion; and of late years I have always, so soon as the antimony had checked the inflammation, used the iodide of potassium in combination with liquor potassæ till some effect was produced. The perineum should be blistered as often as the patient will allow it, and during the intervals blue ointment combined with camphor may be rubbed in every night. The bougie is also to be passed twice a week, so soon as the state of the urethra will permit. If suppuration cannot be averted, the matter should be let out by a *small* puncture with an insect-needle. Mr. John Marshall has used,[1] with great success, solution of morphia in oleate of mercury as an outward application in threatening abscess of the perineum from inflammation of one of Cowper's glands, as also in epididymitis; in one case where I tried it the result was decided failure.

12. Inflammation of the Prostate. *Pathology, Divisions.*—Three forms are distinguished. 1. *Acute*, marked by acute, often violent, burning pain in perineum, aggravated by walking or even moving, perineum sometimes becomes sensitive to every touch, feeling of a foreign body in rectum, great difficulty in evacuating bowels and making water, which may rise to tenesmus, strangury, and passing of water drop by drop, catheter suddenly arrested at prostate. Sometimes hypogastric tension, great anxiety, and even fever of synochal type. After a day or two pulsating pain in region of prostate; one or more lobes of the gland may be swollen, fluctuation usually in eight to twelve days, possibly marked by rigors. 2. *Subacute or chronic* (*Congestion of the Prostate*). Heavy dull feeling in the perineum, with stiffness and heat, particularly on standing or moving, pain and smarting in upper part of thighs, frequent desire to make water, pain after voiding it, possibly, though by no means frequently, some mixture of blood in the last drops of the urine, often urine turbid, not unfrequently hypersecretion of mucus in urine, or there may be small strips of mucus in it mixed with pus from the prostate. Gland not much enlarged; painful on firm pressure. Affection seen chiefly in my experience when the patient has taken much copaiba and hard exercise. 3. *Mucous*, known also as catarrhal or canalicular. Affects principally the mucous membrane, from the ramifications of which in the gland drops of muco-pus

[1] Lancet, vol. i., p. 711. 1872

have been seen at an autopsy exuding on pressure, the stroma not being inflamed or even red; but organ almost always tender.

Prognosis.—Favorable; I believe recovery to be, even in bad cases, almost entirely a question of attention and sound treatment.

Results.—The end of the first form may be that the gland becomes filled with matter, generally burst by passing the catheter, though it may open externally. Not unfrequently, according to Fournier,[1] the interminable suppuration from a prostatic cavity carries the patient off after a long period of suffering and cachexia. Mr. Phillips says [2] this form may end in gangrene. A case of death from abscess of the prostate, following upon this variety of the affection, occurred some years ago at St. George's Hospital, under the care of Dr. Pitman.[3] The patient was a man, aged five-and-twenty, and had only been suffering a fortnight when he was admitted, eight days after which he died. The abscess was not detected during life. The autopsy revealed nothing beyond extensive suppuration in the gland, and profuse purulent discharge from the urethra. Indeed, but a few years ago, when it was thought that the running in gonorrhœa is the natural cure of the disease, and the effort of nature to throw off the virus, death from disease of the prostate was not at all uncommon.[4] The subacute kind may, if neglected, end in very obstinate induration. The follicular order frequently degenerates into an obstinate gleet, and I shall have to say a few words about this in the next chapter.

Treatment.—In my opinion, when we have to deal with an acute case, the remedy before all others is tartar emetic as recommended for abscess of the perineum, and, if the patient object to this, small doses of calomel or hydrargyrum c. creta, a good sedative every night, rest in bed, and very light diet. Leeches are often useful, this being perhaps the only complication of gonorrhœa in which they are called for, and patients often speak gratefully of the benefit derived from the employment of them; but in point of potency they are far behind the antimony, the operation of which should be seconded by a resolute and persevering scalding of the perineum, with the exhibition of a full dose of some gentle aperient, such as syrup of senna, or castor-oil in hot milk in the morning. As to enemata and suppositories, they have, the latter especially, always given more pain when I have seen them used than done good, and I quite concur with Dr. Erskine Mason [5] in objecting to their employment. So soon as the more acute symptoms have passed off, iodide of potassium should always be given. Brodie relates [6] a case, where the patient was suffering great distress from enlargement of the gland, which was two or three times its ordinary size. The patien tattributed the disease, and I think with justice, to an attack

[1] Nouveau Dictionnaire, tome, v., p. 203. [2] Op. citat., p. 303.
[3] Lancet, vol. i., p. 408. 1860. [4] Howard: Op. citat., vol. i., p. 218.
[5] American Journal of Syphilography, etc., p. 289. 1870.
[6] Works, vol. ii., p. 503.

of gonorrhœa ten years previously. The affection had existed in its present form, and that a pretty severe one, for three or four years. Yet two grains of iodide of potassium, three times a day, in about seven weeks reduced the prostate to its normal dimensions, and, judging from my experience of such cases, would, if taken earlier, have saved the patient all these years of suffering. So soon as the prostatic affection is checked, the treatment of the gonorrhœa may be resumed.

Brodie recommends [1] rest in bed in the horizontal position, blood to be taken from the loins or perineum by cupping, from the latter region, however, only when the services of a dexterous cupper can be secured; when this cannot be obtained, then leeches to be applied to the part. Active aperients are to be exhibited, followed by opiates in the form of an enema or suppository. After the bowels have been freely opened, calomel, in doses sufficient to bring on the mercurial action, is often useful, and if there be retention of urine, a small gum catheter is to be introduced, and the water drawn off when necessary. But, even with so great an authority against me I do not hesitate to say that the tartar emetic is more efficacious. In bad cases Fournier applies twenty to thirty leeches two or three times in succession. When any part of the prostate remains tender and swollen, as also in indolent swelling after epididymitis, Dr. Schuster finds the Aix-la-Chapelle warm sulphur-baths very useful. At the same time I must observe, that the recorded effects do not seem to exceed those following the plan recommended, which, thoroughly carried out, rarely, I believe, fails.

For the second and third forms nitrate of potass in five to ten grain doses three times a day in infusion of cascarilla or snake-root, or bromide of potassium fifteen to twenty grains every four or five hours, with the mercury and sedative at night, can, I think be quite relied on. This treatment must be supplemented by hot bathing, blistering, rest, and iodide of potassium, just the same as the other.

13. Inflammation of the Seminal Vesicles.—I have no personal experience of anything like active inflammation of these bodies being set up by gonorrhœa; but it seems pretty certain that an action closely resembling irritability of the bladder is sometimes thus induced, for I have seen vesicular gleet developed by gonorrhœa and prove rather difficult to cure. M. Velpeau was in the habit of pointing out the rather frequent occurrence of a certain degree of inflammation in these bodies from gonorrhœa. In a few rare autopsies, according to Fournier, the appearances were—general tumefaction with hardness, injection of the mucous membrane, the seminal fluid sometimes replaced by yellow muco-pus, in which the microscope showed pus-globules. Godard twice saw atrophy of these organs. Respecting the treatment of the inflammatory form I can say nothing worth the

[1] Works, vol. ii., p. 191.

reader's attention ; that of the latter consists of tonics, with mild aperients to obviate the irritation set up by hard stools, blisters to the perineum, and, when the urethra remains irritable, weak injections of nitrate of silver with the long syringe described at page 172. It is perhaps scarcely necessary to caution the junior practitioner and student here as to the diagnosis, by digital examination, of an inflamed and projecting prostate, only about an inch from the entrance of the gut, and with no very marked parting between its lobes ; and of the vesicles, which can scarcely be reached with the finger and are widely separated.

14. Gonorrhœal Peritonitis.—Although those authors who have touched upon the subject seem undecided whether this complication and phlegmonous inflammation of the cellular tissue outside the peritoneum are due to extension of the orchitic inflammation along the vas deferens to the cavity, or that of gonorrhœa from inflamed seminal vesicles, I am quite disposed to think that, as regards the phlegmonous inflammatiou at least, we must, supposing either can be looked upon as a profitable factor, lay the burden upon the vesicles. Were such a result due to propagation along the vas deferens, we should, judging from the frequency with which this occurs, see abdominal complications more often. Besides, it is at least as probable that a suppurative inflammation, such as is noticed in the vesicles, would set up a similar form of action within the abdomen, as that this should result from the affection of the deferent canal, which I believe never ends in the formation of pus. For such reasons I have decided to take these complications here. Hunter, however, had a case of peritoneal inflammation, arising in his opinion from the vas deferens being affected by gonorrhœa "in its course through the belly and pelvis." According to Fournier[1] Ricord has several times seen this complication, which, judging from the context, must be supposed to have arisen in the same way. Cases have also been recorded by Messrs. Gosselin and Godard. In the first case mentioned[2] by the former of these two authors, the inflammation seemed clearly to extend from the right testicle by the corresponding vas deferens and seminal vesicle, the latter being extremely tender on pressure, although the orchitis was not very marked. The attack was, however, very slight, the patient being much better the next day, though only the most simple means were used ; the disorder being apparently supplanted by a large swelling of the cauda and lower half of the body of the epididymis.

So far back as 1856 M. Peter published a case of gonorrhœal orchitis followed by inflammation of one of the seminal vesicles, and then of the peritoneum and pleura, ending fatally. The patient was a delicate lad, sixteen years old, admitted into the hospital for orchitis of the left side. Ten days after entering he was attacked with shiverings, feeling of illness,

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[1] Nouveau Dictionnaire, tome v., p. 214.

[2] Gazette des Hôpitaux, p. 434. 1873.

nausea, vomiting, which became bilious and abundant, and pains in the abdomen, slight at first and then growing severe. There was no abdominal distention, but the patient rested fixedly on his back; there was slight cough with dyspnœa; no hiccough. The pulse was 105 and compressible; there was great thirst, accompanied by repeated and abundant bilious vomiting. The orchitis does not seem to have been very severe, and the indurated epididymis was not very painful to the touch. The case was diagnosed as peritonitis, due to extension of the gonorrhœal inflammation through the medium of the vas deferens and seminal vesicle, and was treated with leeches, mercurial inunctions, cataplasms, and ice. Delirium came on, the left side of the chest became painful, and the patient died in a week from the beginning of these symptoms, and sixteen days after admission. M. Peter expresses the opinion that, in this case there was inflammation by contiguity as well as by continuity.

At the autopsy a litre of purulent fluid was found in the pelvic basin, the intestines were covered with purulent and glutinous serum; there was some amount of false membrane on the ascending colon and liver. The urethra was red at its anterior part; the veru montanum of remarkable paleness; both the ducts and stroma of the prostate were inflamed. In the right seminal vesicle was a small quantity of spermatic fluid which contained epithelial cells, molecular granules, and a few dead spermatozoa. In the left vesicle was found a small quantity of purulent liquid, in which the microscope showed existence of pus-cells, mixed with epithelial cells, but no spermatozoa. This vesicle was larger than the other, owing to the surrounding cellular tissue being much injected and thickened; the peritoneum underlying it was more vascular than any other part even at the seats of inflammation. At the point where it turns round the left seminal vesicle the vas deferens was much injected, as was also the surrounding cellular tissue. There, as in its pelvic portion, this duct was swollen, hard, and firmly adherent to the peritoneum which covered it. The overlying cellular tissue was hardened; the mucous membrane of the canal pale. The left epididymis larger than the right.

Prognosis.—Serious, three patients out of five attacked having died. Fournier admits the possibility of this grave result. Of the treatment I cannot speak, having seen no cases myself, and having found no directions in any work or paper.

15. Sub-Peritoneal Inflammation.—Some years later[1] M. Faucon addressed a note to the Société de Chirurgie on the subject of this complication which he connects with the peritonitis of gonorrhœa, first mentioned by Hunter as due to the gonorrhœal inflammation having extended by the vas deferens, but no further investigation of the subject took place till the publication of his own excellent memoir[2] on the subject.

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[1] October 22, 1873. [2] Archives Générales de Médecine, tome ii., p. 385. 1877.

In a case of this inflammation, following upon gonorrhœal cystitis and orchitis of the right side, described [1] by him, he says there was no swelling over the tract of the cord, but the patient pointed to the sub-inguinal and inguinal parts of this line as the chief focus of the pains which he felt in the whole of the hypogastric region, and which seemed to radiate, growing weaker from the inguinal region toward the surrounding parts. The pain was increased by pressure. Fever, which seems, though not expressly stated, to have accompanied the orchitis, reappeared, the patient felt very unwell, and during the following twelve days considerable tumefaction of the sub-peritoneal cellular tissue took place. At first there was a sort of puffiness, appreciable only to the touch, at the lower part of the internal iliac fossa. This puffiness extended rapidly to the inner inguinal ring. It was then found that the wall of the abdomen was not invaded, but at the end of a few days this in its turn was attacked, and became the seat of a dense induration like wood (ligneuse), quite separate from the skin, extending to four fingers' breadth above the fold of the groin. At one time the swelling of the vas deferens was fused with the induration of the abdominal wall. The pain, which had at first been dull without throbbing, was speedily accompanied by nocturnal exacerbations which entirely (!) deprived the patient of sleep. The pain stretched along the iliac crest and in the direction of the navel, but never toward the thigh. The pain was increased by coughing, laughing, and speaking, and pressure even elicited a cry of pain. Movements of flexion and extension, though restricted, were practicable so long as the patient remained in bed, but became much more painful and difficult when he stood up for a few minutes. The inguinal and scrotal parts of the cord remained normal. The general health was bad, there being continual fever, with a pulse of 100 to 105, accompanied by low delirium at night even when the patient was wide awake. The tongue was thickly coated, and there was complete anorexia with thirst and obstinate constipation. The affection evidently lasted in a very severe form from August 3d to October 20th, and at one time assumed such a grave aspect that M. Faucon cut down more than an inch (4 centimetres) deep in search of pus, but found none.

M. Faucon considers that both gonorrhœal peritonitis and sub-peritoneal inflammation appear in the third to the fourth week of the discharge, a statement of great moment as respects the diagnosis, particularly when we are told [2] that in Velpeau's case the peritonitis remained undetected for four days.

Prognosis.—Serious here also, for though I do not anywhere find death mentioned as the result, it is clear that the course and symptoms were of a nature to awaken great anxiety.

Treatment.—M. Faucon recommends energetic use of antiphlogistic

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[1] Archives Générales de Médecine, tome ii., p. 394. 1877. [2] Ibid., p. 558.

measures, prolonged employment of ice, and preventive division of any constriction in the affected parts. Along with this complication may, I think, very properly be placed that which follows.

16. Gonorrhœal Perinephritic Abscess.—A case of this, the predisposing cause being evidently gonorrhœa, is mentioned by M. Laforgue.[1] The patient, a young man, age not given, had used some quack injection to cure a gonorrhœa, which had the effect of arresting the discharge; then, having indulged in a debauch, he was seized with retention of urine which required the immediate use of the catheter and antiphlogistic treatment. The passing of the instrument was painful, and revealed a tender and swollen state of the prostate, which had been the cause of the stoppage. The bladder became inflamed, and notwithstanding the most energetic employment of hip-baths, belladonna inunctions, and so on, very little relief was obtained. There was great feverishness with exacerbations at night. The pain and difficulty in making water slowly gave way, but the straining of the bladder caused persistent suffering, and the urine was fetid and charged with membranous *débris*. The patient felt ill, lost his appetite, and suffered from constant pain in the hypogastric region. After dragging on in this way for three weeks he was suddenly attacked with shivering and intense abdominal pain, accompanied by tumefaction of the right lumbar region, which also extended to the right iliac region. The lumbar swelling was opened and gave issue to a large quantity of pus. The reason of the collection forming in this part is, according to M. Laforgue, that such abscesses have their seat behind the kidney which separates them from the peritoneum.

The following case by Dr. Alexander[2] was evidently enough of much the same nature. The patient had been treated for gonorrhœa with aperient salines and alkalies, under the influence of which, apparently, the discharge ceased. Soon after he began to feel unwell and lost his appetite; pain came on in the left lumbar region. The skin became hot, thermometer in mouth 105°. A diaphoretic with aconite reduced the temperature, but the tongue was furred and bilious vomiting set in, accompanied by "horrid" pain in left loin, which hot fomentations failed to relieve; indeed he continued to get worse, and at the end of eleven days complained that the pain was extending round the back to the right side. On examining, a small immovable tumor, with a doughy feel, was found two inches to the left and on a level with the umbilicus. The patient was now moaning, restless, and bathed in perspiration, the tongue was hard and brown. Hypodermic injections were ordered to induce quiet, and castor-oil and croton-oil to clear the bowels well out. On the nineteenth day there was a distinct feeling of fluctuation in the tumor; the next day a needle was in-

[1] Revue médicale de Toulouse. Quoted in Gazette des Hôpitaux, p. 316. 1877. Also in Archives Générales de Médicine, tome ii., p. 547. 1877.

[2] Lancet, vol. i., p. 538. 1881.

serted into the most prominent part of it, in front and two inches to the left of the umbilicus. Seven ounces of healthy pus were drawn off, and two days later seven ounces more; another day twenty ounces were taken, and again on another twenty-two, the patient finally recovering. The treatment after the aspiration was commenced is not stated.

17. Gonorrhœal (?) Pyelitis and Nephritis.—Two fatal cases of this affection consequent on gonorrhœa were reported to the Clinical Society.[1] In consequence of both patients being admitted into the hospital in an unconscious state, no history was obtained of either till after death, and the real nature of the disease was only revealed by autopsy; but Dr. Murchison, who communicated the cases, entertained little doubt as to the exact state in each of them.

The first was that of a man, twenty-eight years of age, brought to the hospital in a state of profound coma, with low muttering delirium and dry, brown tongue. He had several attacks of general convulsions after entering, and died in three hours from his admission. He had suffered from gonorrhœa for some time, but the cerebral symptoms only came on thirty hours before he was made in-patient. After death the entire length of the urinary passage, from the anterior end of the urethra to the pelves of the kidneys, was found to be in a state of intense inflammation, the mucous membrane being brightly injected and the surface bathed with pus. Both ureters were full of thick yellow pus. Both kidneys were in the first stage of acute nephritis, and their pelves were full of pus. The lungs were much congested in their dependent parts, and in the lower lobes were a few small patches of incipient lobular pneumonia.

The other case was that of a woman twenty-five years old. She was unconscious at the time of admission, but constantly moaning. Her countenance was dusky and her breathing labored; the pupils were equal, but there was slight internal strabismus of both eyes. There were signs of hypostatic congestion of the lungs. She gradually became comatose, and after two convulsive fits died on the second day from admission, the cerebral symptoms having begun the day before she entered. Autopsy showed membranes and substance of brain intensely hyperæmic; no exudation of lymph, no sign of tubercle either in cranium or lungs. Lungs congested in dependent parts, otherwise healthy. Both kidneys in early stage of acute nephritis; large, smooth, and almost black from intense congestion. Ureters and pelves of kidneys full of thick yellow pus; the bladder also contained pus. The lining membrane of the vagina, urethra, bladder, ureters, and pelves of kidneys intensely red.

Dr. Greenhow saw[2] a case which seems to have been of a similar nature, the man having died in a state of coma which lasted thirty-six hours. He was at first thought to have been poisoned, but the case was diagnosed

[1] Transactions, vol. ix., p. 25.

[2] British Medical Journal, vol. ii., p. 718. 1875.

as cerebral metastasis from gonorrhœa checked by treatment, though it seems to me that the gonorrhœa was actually existing at the time of admission.

18. Gonorrhœal (?) Pleuritis.—The existence of a form of pleurisy, derived from gonorrhœa in the same sense as rheumatism arises from it, seems to me doubtful in the highest degree. Tixier mentions [1] a case which he says was clearly gonorrhœal, "bien nettement blennorrhagique," but I question whether it will be accepted as such. The dates are not given with accuracy, but the patient seems to have had a slight attack of pleurisy of the right side, which came on when he had been suffering for a long time from gonorrhœa, not a very unusual incident I should say. He left the hospital with the gonorrhœa uncured, and had a relapse of the pleurisy, at which point the history and evidence alike end. Gonorrhœal pericarditis, endocarditis, and some allied affections being more intimately connected than the foregoing with rheumatism, indeed almost to be viewed as results and complications of the latter, will be considered after it.

19. Gonorrhœal Rheumatism.—*History.*—M. Voelker, in a most able and exhaustive treatise [2] on this subject, tells us that this form of rheumatism was described by Martinière in 1644, who, however, only says we must not suppress gonorrhœa too quickly for fear of bringing on pains similar to those of rheumatism. He then traces it through Blankard, 1688, Ucay, 1702, Astruc, 1743, and Col de Villars, 1759, the evidence of all four, however, being very doubtful. Some time previously M. Ricord had remarked that the affection was pointed out by our countryman, William Musgrave, in 1723. I have not seen any work by Musgrave of this date, but the account given in an earlier one [3] is not at all satisfactory. He says [4] "the baleful practice of empirics exasperates the tendency to arthritis, for these busybodies, in treating gonorrhœa, attend too much to the suppression of the purulent discharge only, neglecting or carrying out very remissly what ought to be chiefly and sedulously enforced, namely purging. The enemy, being thus detained within the frame, enters the blood and parts in greater force, and with unimpaired virulence, first bearing the principles of the venereal disease (Patursa), and then in time generating a species of arthritis." I do not see the slightest proof in this or in anything which follows that Musgrave discriminated at all between gonorrhœal rheumatism and the rheumatoid pains of syphilis; he must at least have seen the latter, and if he did see the former, must have observed very badly to confound together, as he evidently does, two diseases so distinct. Voelker then tells us that the affection was further described by Selle and Swediaur, 1781, by Colle, no date given, and by Yvan in 1806, from which time onward its history need not be traced, the disease being

[1] Considérations sur les Accidents à Forme rhumatismale, p. 59. 1866.

[2] De l'Arthrite Blennorrhagique. 1868.

[3] De Arthritide Symptomatica. 1703. [4] P. 132.

noticed with steadily increasing frequency. Brandes, of Copenhagen, says[1] it was mentioned by Monteggia in a work[2] which I have not been able to find.

To revert however for one moment. The date of Swediaur's work, in which he speaks of the affection, is given by some authors as 1781; that of 1788, however, which was the only one in the Library of the College of Surgeons, when in a previous edition I gave a very brief account of the complaint, does not contain a word about the matter. Indeed, though Swediaur devotes several pages of it to a general abuse of Hunter, he never seems to have noticed that the latter writer records a case of the affection. In the edition of 1819, afterward added to the Library, there is a brief notice[3] of it. He calls the disorder gonorrhœal rheumatism, and describes it as attacking the knee, and yielding to mild diluents, and a liquid ointment made with "gum resin ammoniac" and vinegar of squills. He does not seem to have had any idea of its distinctive characters. In his lectures, 1806–07, Sir Astley Cooper describes the disease, in so far that he narrates[4] the case of a patient, who told him that gonorrhœa was always followed in him (the patient) by rheumatism; and he adds that this proved to be so, for it ensued, in a very obstinate shape, in the very case for which Cooper was consulted. He, too, does not seem to be aware that the disease is a separate and very unmanageable variety.

All the esential features in the discoveries of Swediaur and Cooper were made known by Hunter as far back as 1786. "I know," he says,[5] "one gentleman who never had gonorrhœa but that he was immediately seized with rheumatic pains;" and Whately,[6] writing in 1801, reports a case where a patient with gonorrhœa was seized with rheumatism of one wrist, then in the other wrist, and afterward both knees in succession; after another attack of gonorrhœa the patient again had rheumatism, first in one knee and then in the other, and then again in the ankles and wrists. I believe every person who reads Whately's work will feel sure that he considered these affections of the joints to be gonorrhœal. But Brodie was the first who in England recognized the true nature of the disease and made it known. I do not see, in any writer before his time, the least proof that its distinguishing features and obstinate character had been appreciated; and I think any one who will compare Swediaur's fragmentary description, and his ridiculous statement about the affection yielding to diluents and ammoniac, with Brodie's luminous account and his clear recognition of its resistance to treatment, will come to much the same opinion as myself.

Pathology.—Of all the complications of gonorrhœa this is one of the

[1] Archives Générales de Médecine, tome ii., p. 265. 1854.
[2] Remarques pratiques sur les Maladies vénériennes. 1798.
[3] Vol. i., p. 252.
[4] Lancet, vol. iii., p. 301.
[5] Op. citat., p. 51.
[6] Op. citat., p. 75.

most formidable and the least amenable to treatment. I therefore propose to consider it somewhat in detail, especially as very contradictory opinions prevail respecting its etiology; the first question that meets us on the way being that of whether there really is a true gonorrhœal rheumatism, distinct from the ordinary form, and due to gonorrhœa only.

Dr. Elliotson[1] held that this affection is not due to gonorrhoea at all, because in some cases there is no history of infection; he seems to have believed that the rheumatism and discharge might come on together, without the patient having had connection, the running being in fact merely a manifestation of rheumatism, an idea which I have seen twice put forward since his time. The chief reason for the belief seems to be, that occasionally the two affections show themselves when the urethra of a patient, laboring under stricture, has been irritated, and when there is no proof of gonorrhœal infection. But the evidence against this opinion is strong. In all the cases that I have seen the rheumatism complicated undoubted gonorrhœa. For many years I have never been without cases of stricture under my care, yet up to the present hour I have not seen gonorrhœal rheumatism from this lesion. Stricture itself means, often enough, uncured gonorrhœa or gleet. Dr. Elliotson's treatment was not calculated to restore the urethra to a healthy state, and therefore we can easily understand that an irritant, which will often, under such circumstances, renew the purulent secretion, should also rouse again into activity the slumbering disposition to rheumatism. I cannot help suspecting that this is the explanation of catheterism setting up the mischief. Out of all the cases mentioned by Dr. Elliotson, and those writers who have taken his side of the question, there is not one where we can feel assured that the urethra was in a healthy condition, and that the patient had not been, either previously or recently, exposed to infection, and no other evidence is to be relied on.

Several writers have espoused similar views; among others Mr. Thomas Nunn,[2] who questions the fact that an obstinate and peculiar form of rheumatism, differing, both in its features and in its resistance to treatment, from the ordinary complaint, is set up by gonorrhœa in the urethra. His own arguments damage the conclusion he aims at. His contention seems to be, that constitution may have a good deal to do with the matter, because some persons have a tendency to this complaint, a fact which no one ever sought to controvert if the foregoing gonorrhœa were only admitted; that gout may give rise to urethritis, and that obstinate stricture may be complicated by a syphilitic taint. Granting all this, I cannot see how it is to be looked upon as proof that gonorrhœal rheumatism does not exist.

I would meet in the same way the arguments of Brodie,[3] and Dr. An-

[1] Medical Times and Gazette, vol. i., p. 642. 1860.

[2] Lancet, vol. ii., p. 909. 1871.

[3] Works, vol. ii., p. 145.

gelo Scarenzio.[1] In not one of the cases described by the former is there anything to show that the disease broke out in a person who had never had gonorrhœa; in most of them there is proof enough that this had been the case at the beginning of the story, and that an uncured state of it might have been at the bottom of the relapse. Urethritis is not a common result of rheumatism in a person who has never had gonorrhœa, yet this is substantially what Brodie would maintain. In one of Scarenzio's cases, directly he stopped the urethral discharge with the nitrate of silver the rheumatism began to abate. The urethritis returned, and with it came back the rheumatism in a worse form than ever; he again cauterized the urethra with the same good effect, and a decline in the rheumatism at once showed itself. It is so purely and intensely gonorrhœal, that Fournier declares he has had under him patients who suffered from it every time they had gonorrhœa, and who yet contracted simple urethritis without any such result; rather strong evidence of the specific nature of gonorrhœa itself. It has been seen in persons who had previously had ordinary rheumatism, three out of twenty-nine patients treated by Dr. Pye-Smith[2] had previously suffered from rheumatic fever; this I never observed. Twice I have treated gonorrhœa in persons intensely rheumatic. The first patient had, when I saw him, suffered from the discharge upward of six years. He never had, all this time, a sign of gonorrhœal rheumatism. Two or three times before, and once while under my care, he was attacked by common lumbago. It came and went as this affection usually does, yielding on one occasion to simple ironing. The urethral discharge was not in the least influenced by any of these attacks. The gleet was cured and never returned, but the lumbago came more and more frequently, till he became a perfect martyr to it and rheumatism in other places. The other patient had been severely tormented with rheumatism for quite eighteen months, and was only a little better when he contracted the discharge. Though he had orchitis and irritable bladder, no exacerbation of the rheumatism ensued, nor did any other form of this complaint appear. The complaint has been known to attack the same patient five successive times with as many gonorrhœas, no rheumatism showing itself while he remained free from infection; and Fournier pertinently asks whether any other affection can be found which coincides so frequently with gonorrhœa—a question which some pathologists might feel a good deal of difficulty in answering. In the same way I would deal with the question of its being in any way whatever connected with gout, a hypothesis I feel compelled to reject entirely.

This much for the dependence of gonorrhœal rheumatism on a special disease of the urethra; to the best of my judgment it differs also in its course

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[1] Giornale italiano, vol. ii., p. 129. 1874.

[2] Guy's Hospital Reports. Third Series, vol. xix., p. 344.

and symptoms from the non-specific form. The gonorrhœal variety appears, in its most acute and formidable shape, without any of those symptoms of general disturbance which so often accompany common rheumatism. The rheumatic fever, which requires a six weeks' course of mint-water to cure, is unknown here. In all the cases I have seen, it was not the pyrexia but the pain that laid the patient up. Fournier noticed [1] fever, but slight and of brief duration, the pulse being never more than 90 to 100. M. Quinquaud, too, says that when only one joint is attacked there may be a little feverishness and the temperature may rise to 102½° (39° C.).

The great prostration, also, which we see in the rheumatism of every day life, the gastric derangements, acid sweats, and great deposits of lithates are absent. In my experience it has never assailed the joints generally as in rheumatic fever, and this is the experience of some very good observers. It affects tendinous sheaths as at the wrist or foot, and tendinous bursæ, more frequently. There is frequently considerable effusion into the part, simulating true hydrarthrosis, while the erysipelatous redness which accompanies ordinary rheumatism is rarely seen in this form.[2] The effusion of serum into the joint, when it does take place (hydrarthrosis), is abnormally sudden and extensive, and peri-articular effusion into the cellular tissue equally so; the extremities of the bones have been found much more enlarged, and swelling of a limb has been noticed to a greater extent than is ever observed with simple rheumatism. The tissue of the cartilages is attacked rather than the synovial membrane, as is shown, according to Mr. Davies-Colley,[3] by the great œdema of the soft parts round the joint. Its attack is more sudden and concentrated, its decline slower and less sudden, while both seem quite independent of the weather, though Voelker adduces some cases to show that a chill may develop it; and the same effect has been noticed from a wrench, violent effort, etc. The same author contends that climate is an important element in the genesis of this disease, it being so rare in Italy that, at Padua, Vanzetti and Pinali never saw a case. Temperament goes, I believe, for nothing; but Voelker says that, out of fifteen cases which he saw, thirteen occurred in persons of lymphatic diathesis, a statement not yet corroborated, I believe, by the experience of a single observer. He also states [4] that of these fifteen cases twelve happened in January, March, November, and December. I never saw it attack the heart, and all the industry of M. Morel [5] only enabled him to collect three cases of pericarditis and ten of endocarditis following this form of rheumatism. When we recollect then how common this is, and that the proportion of heart affection to rheumatic fever is at least fifty per cent.,[6] the conclusion

[1] Gazette Hebdomadaire, p. 129. 1866.
[2] Gazette des Hôpitaux, p. 1185. 1877.
[3] Guy's Hospital Reports. Third Series, vol. xxvi., p. 190.
[4] Op. citat., p. 32.
[5] Thèse pour le Doctorat en Médecine. 1878.
[6] Medical Times and Gazette, vol. i., p. 32. 1883.

is forced upon us that in this respect also there is an essential, irreconcilable difference between the two affections. Ordinary rheumatism, when it does fasten on the frame with such severity as to last for years, is almost always more general and formidable at the outset than the specific kind. It is not a common thing for the first attack of it, in a purely local shape, to lay strong men up for three or four months, as we see in the gonorrhœal variety, and never to return till the patient is again attacked by gonorrhœa.

This part of the subject has been argued with great ability, at the Hospitals' Society in Paris, by MM. Lorain, Féréol, Hervieux, Peter, and Fournier, in a debate which continued upward of two months, and which is fully repeated in the *Gazette Hebdomadaire* for 1866 and 1867, and in the *Union Médicale* for a corresponding date. The first-named speaker maintained [1] that gonorrhœal rheumatism may arise from other morbid conditions than urethritis, but his arguments were previously met by M. Fournier, with counter-arguments of superior force, in a memoir communicated to the society,[2] and later on, in a series of papers published in the *Annales de Dermatologie* for 1869.

M. Fournier says that the essential cause of the symptoms, which we comprise under the name of blennorrhagic rheumatism, is blennorrhagia itself; but I am quite of M. Féréol's opinion,[3] that M. Fournier goes too far in ascribing it so unhesitatingly to catheterism, and saying, that if we give him a sound he will produce gonorrhœal rheumatism. I have repeatedly passed both the bougie and catheter in gonorrhœa; I have drawn off the water day after day, have used the long syringe, and even the caustic-holder, in this disease without any such result; whereas the symptoms ensuing from the employment of the catheter acting unfavorably are far more menacing—shiverings, quick pulse, great prostration and anxiety, loss of appetite and formation of pus. Of course the same objection applies to the statement [4] of M. Demarquay, that very often after the use of the catheter pain appears, ripening into a veritable arthritis, which in a few rare instances may take on all the characters of the gonorrhœal form. M. Mauriac runs to as great an extreme. He considers [5] that two cases, which he relates,[6] show that gonorrhœal rheumatism can be evoked by simple purulent running being set up in the urethra through the use of nitrate of silver injections. The evidence is among the most extraordinary I ever heard of. In the first case the patient never had any urethral discharge, and it is not shown that he ever used injections; he was merely suffering from syphilis. Besides, unless the urethra is affected with uncured gonorrhœa, nitrate of silver injections would not set up purulent running for more than a few hours and in a very mild form. The second

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[1] Gazette Hebdomadaire, pp. 42, 106. 1867.
[2] Ibid. 1866 and 1867.
[3] Ibid., p. 44. 1867.
[4] Voelker: Op. citat., p. 125.
[5] Gazette des Hôpitaux, p. 298. 1875.
[6] Ibid., p. 274.

patient had balanitis and then gonorrhœa, which M. Mauriac maintains was simply urethritis provoked by the same injections.

M. Pidoux also points out[1] differences in the course run by gonorhœal rheumatism. Thus, for instance, when the latter attacks the radio-carpal articulation, the swelling all at once attains such a height that the folds and projections disappear, and the narrowing at the wrist is lost, while the diameter through from front to back almost equals that from side to side. The synovial membrane is thickened, the extremities swell, and, if the case be refractory, atrophy is set up in the muscles inserted above and below the articulation. Even when the gonorrhœa is quite recent, the patient has a pale, fatigued look, a change which I have not noticed; finally, he tells us that this form of gonorrhœa brings in its wake obstinate swellings of the inguinal and submaxillary glands, sebaceous acne, pityriasis, impetigo of the scalp, coryza, and crusted eruptions on the lips, not one of which have I seen.

According to M. Laboulbène,[2] there is a wide distinction between the pathological products of this and the common form. He twice punctured the knee-joint of a young man suffering under gonorrhœal rheumatism. The liquid obtained was yellow, viscous, purulent, and much charged with fibrinous matter. It contained a largish proportion of pus-globules and blood-globules, but no mucine, whereas the fluid of simple synovitis and ordinary arthritis yields abundance of this substance. The blood, too, does not show the buffy state seen in the common form. M. Rollet bled five patients suffering from gonorrhœal rheumatism.[3] In one of them six articulations were affected, yet the clot did not present any inflammatory coat. Of the other four one had four joints attacked, the others two and three; but the blood was not buffed in one of them. In twenty-nine cases Dr. Pye-Smith found[4] the urine free from albumen or sugar, except in one where transient glycosuria was present.

Fournier found that out of fifty-two cases the joints were not affected in fifteen, and that in sixteen cases out of fifty-two the disease was limited to one locality. It is to be observed, however, that he ranks eye affections among the manifestations of this rheumatism, and some instances of it are counted among the number limited to one spot. But he finds the gonorrhœal form more often restricted to a few places than to one, which does not accord with my experience, while it does not, like common rheumatism, attack several joints at once.

Divisions.—He recognizes four divisions of this affection: 1. That of hydrarthrosis, which is very rare. 2. The rheumatic or arthritic form. 3. Simple arthralgia, in which there are joint pains, leaving the joint, however, unaffected; showing no tenderness or tumefaction; no creaking is heard on moving the joint, and the part is not very sensitive to pressure,

[1] Gazette Hebdomadaire, p. 822. 1866.
[2] Ibid., p. 475. 1871.
[3] Revue Mensuelle, p. 66. 1878.
[4] Op. citat., p. 342.

sometimes even indolent. He has seen this form in the knee, wrist, shoulder, metatarsus, articulations of the phalanges, and temporo-maxillary joint. 4. The knotty form, which is accompanied by deformity of the joint as in knotty (*noueux*) rheumatism or gout. This attacks not only the joint, but also periarticular fibrous tissue, and even periosteum, thus inducing both periostitis and periostosis, or inflammatory exudation, the latter taking its origin in the tissue (*trame*) of the periosteum, painful at first but gradually assuming the shape of an indolent, flattened deposit, so adherent to the bone as to be motionless. He has seen this variety in the carpo-metacarpal, metatarso-phalangeal articulations, and in the great toe.

He has noticed that non-articular parts are more frequently attacked than articular, and that the affection may fasten upon more points numerically than common rheumatism would. In the list of manifestations he includes rheumatism of the tendinous and mucous bursæ, and muscles, simple pains, ophthalmia, neuralgia, as seen for instance in the sciatica elsewhere described by him, and phlegmasia of the periosteum; but rejects the lesions of internal organs, such as those of the pleura, endocardium, pericardium, as also those of the venous system, the rachidian and cerebral meninges, liver, salivary glands, etc.

Once in every three or four cases gonorrhœal rheumatism will appear in other parts than the joints, these other parts including, it is to be remembered, the eye. More persons are affected with the articular than with the non-articular form, the proportion being for the former about thirty-seven out of fifty-two of all cases. This is seemingly in direct contradiction to what has just been said, but he explains the discrepancy by pointing out that the number of attacks, or rather of points assailed, is greater in a case of the non-articular kind. The arthritic variety is not confined to one joint, as is often stated; he only found it so sixteen times out of the thirty-seven cases just spoken of. Consequently he does not accept this as the distinguishing feature between gonorrhœal and common rheumatism; the great peculiarity of the former is that the disease does not attack many joints at the same time, and never makes such a general invasion of these structures as we may see in the non-specific form.

Among the unusual places where Fournier has noticed gonorrhœal rheumatism, are, in addition to the temporo-maxillary articulation as already mentioned, three cases of which have also been reported by Padova,[1] the spine of the scapula, insertion of the tendon of the patella into the tuberosity of the tibia, the carpo-metacarpal joints, and, in two cases, at spots on a level with the spinal apophyses of the dorsal vertebræ; localities in which I believe it is most rare to meet with painful, isolated rheumatism of the common type. The proportion of those affected with gonor-

[1] Giornole italiano, an. viii., p. 231. 1873.

rhœal rheumatism, to that of gonorrhœa patients, is put down by Fournier at 1 in 62, or 31 in 1,912, while Mr. Bond estimates the proportion at 1 in 10, a number vastly in excess of what I have seen. The tendency to this affection seems to increase and decline much more rapidly than that toward orchitis. Out of 56 cases it began in the 1st week in 4, the 2d in 8, the 3d in 18, the 4th in 16, the 5th in 4, the 6th in 3, the 7th and 8th in 3.[1] In my own practice the proportion of cases in the first and second weeks has been decidedly larger.

Gonorrhœal Synovitis.—Before closing entirely the subject of the divisions of this affection, it will be desirable to say a few words about the synovial form, mentioned by that admirable observer, Fournier, and noticed since very fully by some of the French writers. What little I have to lay before the reader is taken from a clinical lecture by M. Lasègue,[2] an analytical review of this and of M. Maymou's views,[3] and from the original memoirs by the last-named author.[4] This gentleman having pointed out how recent our knowledge of gonorrhœal synovitis is, and that M. Rollet was the first person who enforced the recognition of it, says that according to a list drawn up by M. Fournier, it forms about a fourth of the cases classed as gonorrhœal rheumatism. The attack may begin at the end of the first week, but usually comes on toward the commencement of the third. It may, however, appear as late as several months after the gonorrhœa first showed itself, and is then generally associated with some excess in diet, or connection, which has exasperated the running. There are no prodromata; the patient may be taken with a shivering fit, but this may also be absent. The first onset of pain is usually in a joint. This generally lasts a few hours, and then other pains, equally fleeting, attack one part after another, till at last the disorder fastens on one or more of the tendinous sheaths. In one case [5] the pain began in the right knee and was succeeded the next day by pain in the sacro-iliac articulations, again in its turn followed by pain in the articulations of the cervical vertebræ. Then pains, just as fugitive, invaded successively the articulations of the shoulder, elbow, and right knee again, where they lasted three days. Finally the pain quitted this site, to settle definitely on the extensor tendons of the last three toes of the left foot.

Along with the pains come a feeling of not being well and loss of appetite. The tongue indicates fever; in one patient it was coated as in a gouty person. Twice he noticed vomiting. Swelling with pastiness of overlying tissues, sense of fluctuation in affected sheath, and a rose or rose-violet color of the skin may accompany the attack. M. Maymou could not make out whether the outbreak of synovitis influences the urethral affection in

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[1] Revue Mensuelle, p. 199. 1878. [2] Gazette des Hôpitaux, p. 66. 1876.
[3] Ibid., p. 113. [4] Archives Générales de Médecine, tome ii., p. 555. 1875.
[5] Ibid., p. 656.

women, but thinks that in men this is diminished, though not very sensibly; in a great number of cases it remains intact. He distinguishes three kinds of pain. 1. That which takes place independently of any movement or pressure. 2. That which is elicited by pressure; and 3. That induced by movements communicated to the articulations. The first variety is very severe during the first two or three days, and is accompanied by night exacerbations; it soon, however, ceases during the day, and is felt only at night. Finally it generally dies out after the first week. Pressure increases pain over a track corresponding to the affected tendinous sheath. When care is taken to place the tendons in a relaxed position, movement is not painful, but very much so when these are stretched; M. Lasègue particularly dwells upon this feature. Gonorrhœal synovitis may attack a great number of tendons; those it fastens upon by preference are the extensors of the fingers and adductor of the thumb, the tendons of the toes, those at the lower end of the gracilis, sartorius, and semi-tendinosus, forming what the French call the goose-foot (*patte d'oie*), and of the biceps of the arm and thigh.

When the malady has fixed upon a tendinous sheath, the first phenomena noticed are swelling and sense of false fluctuation; then follows a rosy or violet-red hue of the skin. The rosy tint is usually on a level with some of the parts corresponding to the affected tendinous sheath; it may appear in patches. Generally but not always these parts are most painful on pressure. There is always a rather extended zone of œdema round a part affected with pastiness, tumefaction, and inflammatory swelling of the skin; and this œdema is more marked in proportion to the severity of the pain, and the earliness of the date at which this appeared after the gonorrhœa showed itself.

Gonorrhœal synovitis generally lasts only from four to six weeks, and is one of the mildest affections of this kind, milder even than ordinary rheumatism. Three times out of four or five cases M. Maymou satisfied himself that the tendons returned almost completely to their normal state. In one case he observed that after the malady had lasted the usual time, the action of the tendons was still extremely restricted, but in this instance the affection was complicated with arthritis. M. Fournier,[1] in three cases out of ten which he observed, saw the complaint take on a very different character from what is generally noticed, there being tumefaction with a phlegmonous look and erysipelatous hue, accompanied by excessive pain. Both it and the arthritic form may, according to M. Quinquaud, be complicated with erythema nodosum. According to M. Lasègue this affection, the duration of which he fixes at about six weeks, is sometimes only an early stage of a more serious and lasting complaint. The painful spot does not improve, and then, a little later, the whole ligamentous ap-

[1] Archives Générales de Médecine, tome ii., pp. 664 and 666.

paratus is affected and becomes stiff. In a third variety, the articulating surfaces are assailed. M. Lasègue points out, as a pathognomonic sign of this form of arthritis, wasting of the upper parts of any limbs it may attack, not the wasting due to inaction, but a real atrophy beginning with the affection itself; it is seen, however, only in the second variety, but then constitutes a mark distinguishing this widely from the common form. M. Maymou considers that the arthritic form, especially when it attacks the knee and wrist, often for days or even months after occasions patients some difficulty in executing certain movements with the affected tendons. He has never seen the synovial affection induce the various morbid effects (*infirmités*), which result from the others.

Gonorrhœal Sciatica.—Perhaps it will be better to take this affection here, as it seems clearly to be gonorrhœal rheumatism affecting the sciatic nerve. I believe it was first noticed by Sir Everard Home,[1] who describes two cases. In one attack the first patient had, after a recent gonorrhœa, sciatica attended with spasms in the lower extremity, the most severe that can be imagined, followed by a painful affection of the back and knees. In the second he had the sciatica worse than ever, the spasms extending even to the intercostal muscles. The patient was confined to bed nearly four months, and "his life was in imminent danger." In the second case the patient three times had sciatica from gonorrhœa, the first time two or three months after the cessation of the latter. The second of these attacks had lasted two years when he caught the third infection. The credit of thoroughly investigating the affection belongs to M. Fournier. As long ago as 1867 he had collected ten cases.[2] The affection is as distinct from common sciatica as gonorrhœal rheumatism from the ordinary kind, being marked by great suddenness of attack and rapid subsidence, abatement appearing in three, four, or five days; by its assailing persons suffering under gonorrhœal rheumatism and rapidly becoming intense; by its sometimes alternating with gonorrhœal rheumatism and yielding very quickly to cupping and narcotic applications, his experience being thus utterly opposed to Home's; and by its returning with a fresh infection. Two of Fournier's patients twice had it after gonorrhœa. A carefully prepared abstract of M. Fournier's views will be found in the *Medical Times* for 1868.[3]

Up to the date of his memoir Fournier considered that there had not been recorded one authentic case of gonorrhœal arthritis ending in suppuration of a joint. He, however, gives one where this took place; the elbow was the part affected, but the formation may have been, in some measure, due to intercurrent typhoid fever, by which the patient was cut off. Since then three cases have been collected from French writers by

[1] Treatment of Strictures in the Urethra, vol. ii., p. 273. 1803.
[2] Gazette Hebdomadaire, p. 123. 1867.
[3] Vol. ii., p. 647.

M. Talamon.[1] In two of these the suppuration occurred in the elbow; in the third patient, a woman, it took place in the knee and afterward in the hip. A fifth case is reported in Holmes's Surgery.[2] The patient, a male, age not stated, was attacked with great pain and swelling in the right knee-joint. In a few days the lower part of the thigh became filled with matter which had escaped from the distended synovial membrane. On amputating the limb the joint was found to be thoroughly disorganized.

The arthralgic form does not seem to be accompanied by any pathological changes in the joints; it is usually seen in the course of recently contracted gonorrhœa, along with other signs of specific rheumatism, such as synovitis, painful inflammation and ophthalmia, or it may accompany an old gleet without any other manifestation.

I proceed to another set of facts, showing the exceptional tenacity sometimes manifested by this disorder. A young, healthy-looking man applied to me with chronic gonorrhœal rheumatism, which had incapacitated him for four successive winters from doing any work. It was principally seated in the sole of the foot, and the pain was so severe that he could not stand more than half an hour. If he attempted to exceed this time, a hot burning pain attacked every part on which the weight of the body rested, and this soon became so severe as to compel him to lie down. Even when resting the pain grew so excessive toward night that he could not wear a boot. He had wandered about from one surgeon to another, till at last, from sheer poverty, he was obliged to enter a hospital, where he remained eight weeks. He came out as bad as he went in. In this case the pains began three days after the appearance of the gonorrhœa, and resisted three separate salivations carried so far as to loosen the teeth. What else he had used he could not tell; but I gathered from his acconnt that galvanism, clamps to the feet, and mustard-poultices had been tried. Second case very similar and almost as severe.

In a third case the patient was attacked so severely as to be confined to his room nearly eighteen months, under the care of a surgeon who really seemed to have done almost everything that could be done. Amongst other things, the patient took lemon-juice in such quantities that he used to buy lemons in Covent Garden by the hundred. A long and most tedious recovery left him very lame, both in his hands and feet. About six years afterward he contracted another discharge, for which he placed himself under my care, and immediately another attack of rheumatism fastened upon him. For weeks he could scarcely turn in his bed, and at the lapse of four years was still suffering. I afterward heard that he had recovered.

In a fourth case, seeing within the first day or two that signs of rheumatism were showing themselves, I closely questioned the patient as to

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[1] Revue Mensuelle, p. 71. 1878.

[2] Vol. iv., p. 35. 1870.

whether he had ever suffered from this complaint or not, and learning that he had, I begged of him to let me take the most energetic measures at once. Instead of this he went down into the country and thoroughly neglected it. Rheumatism of the most violent character at once assailed both thighs and both knee-joints, extending seemingly up the sheath of the spinal cord, as when I next saw him, a few months after, he could not stand steadily, and was almost paralyzed from the loins downward. Even then nothing could induce him to be prudent, and in this shattered state, a perfect wreck to all appearance, he contracted another discharge. The result was an immediate exacerbation of the rheumatism, which had remained bad all the time. The paralysis also rapidly gained ground from this time, and when I last saw him, *a very few weeks after the first appearance of the discharge just spoken of*, he was unable to get up even two stairs, and could not stand at all. All control over the rectum and nearly all over the bladder was lost.

In the fifth case the patient, a fine, strong, healthy, and very active man, who certainly would not have allowed any trifle to lay him up, was attacked with this rheumatism in the shoulder, almost directly after the gonorrhœa showed itself, in such a violent form that he was four months confined to bed, though his surgeon, a gentleman at the head of the surgical department of a large hospital, showed every attention to the case.

Another patient, who had already suffered from periostitis in the tibia, had an attack of rheumatism from a slight discharge. It was subdued, but the treatment was broken off before anything like a complete cure was effected. Soon after the rheumatism appeared he had complained of an uneasy feeling in the site of the periostitis, and shortly afterward this returned with such severity, that, after nearly losing his leg, he was glad to escape with two abscesses in the tibia and a serious illness of several months' duration. I think it may safely be said that ordinary rheumatism in such a shape does not exhibit this almost unconquerable obstinacy.

Gonorrhœal Rheumatism in Women.—My own experience is that this affection is excessively rare in the other sex, but quite as severe as in men. One of the worst cases that ever came under my care was that of a lady infected by her husband, the pain, which was of the most violent character, appearing before the discharge. One case in the female is reported by Mr. de Meric,[1] one in the sixteenth volume of "Guy's Hospital Reports,"[2] and there are two cases in the eighteenth volume.[3] A case is reported by Mr. Hardy.[4] Dr. Angelo Scarenzio saw three cases in women, all accompanying gonorrhœa of the urethra,[5] and M. Quinquaud also relates three. In a space of about two years M. Fournier saw seven cases in the female, and does not consider the disease so very rare in women, and M. Brun, out of

[1] British Medical Journal, vol. i., p. 335. 1867. [2] Third series, p. 568.
[3] Page 441. [4] Dublin Quarterly Journal, vol. xlvi., p. 241.
[5] Op. citat., loc. citat.

twenty cases, found thirteen in women.[1] Duplay and he say [2] it is as frequent in woman as in man. Davies-Colley, in twelve cases of acute gonorrhœal rheumatism, found nine in women.

M. Ricord has always taught that it is only found with urethral gonorrhœa, but I have seen a very bad form of it accompany obstinate gonorrhœal vaginitis, the urethra showing nothing on repeated examination; and M. Brun mentions a very similar case, there being nothing wrong with the urethra, though there was a notable quantity of pus in the culs-de-sac.

Complications. a.–b. *Gonorrhœal Endocarditis and Pericarditis.*—This form of rheumatism is in its turn complicated by or leads to diseases of a formidable character. Foremost among these stand the affections at the head of this paragraph. The first case of this nature ever reported, so far as I am aware, is by M. Brandes.[3] The patient had gonorrhœa with rheumatism, on which followed endocarditis, marked by prolonged and rough state of the first sound. The second is reported by the same author, but was communicated to him by M. Lehmann; the patient was, under similar circumstances, attacked by pericarditis with palpitation and extension of pericardial dulness. In the third, endocarditis, reported by M. Hervieux,[4] there were present fever, cardiac palpitation, and bellows sound at the base. The fourth case was also one of endocarditis; it is given by M. Tixier [5] from the practice of M. Lorain. There was cardiac complication with bellows sound; also disturbance of circulation, succeeded by signs of mitral insufficiency, with considerable hypertrophy, all following upon blennorrhagia with rheumatic pain. Later on came asystolism, succeeded by death from cardiac disease. Fifth case, pericarditis, is also by M. Tixier,[6] but observed by himself. The patient suffered from gonorrhœa and gonorrhœal rheumatism; at the end of about seven weeks these began to be complicated by general feeling of being ill, fever at night, pericardial anxiety and effusion, with deadening of heart-sounds. The sixth case, endocarditis, is communicated by M. Voelker;[7] the phenomena enumerated are blennorrhagia, rheumatism, and doubling of the first sound at the base; not very strong evidence. The seventh case, endocarditis, is likewise taken from Voelker;[8] symptoms, blennorrhagia, rheumatism; at the end of four weeks pain at apex, murmur with first sound, which, however, disappeared entirely in three weeks. The eighth case, pericarditis, is by M. Lacassagne;[9] it is very fully and carefully related and well worth studying. The affection began with gonorrhœa. Two days after admission the patient was attacked with constrictive pains at the base of the chest, acute pain at apex of heart, characteristic shivering, extension of dulness and

[1] Op. citat., p. 16. [2] Archives Générales de Médecine, tome i., p. 545. 1881.
[3] Op. citat., p. 262. [4] Gazette Médicale, p. 354. 1858.
[5] Op. citat., p. 58. [6] Ibid., p. 82.
[7] Op. citat., p. 110. [8] Morel, op. citat., p. 16.
[9] Archives Générales de Médecine, tome i., p. 23. 1872.

tumultuous rapid sound, *bruit de rappel*. There was no rheumatism in this case. The patient left with the systolic murmur more marked than natural.

The ninth case, endocarditis, is by M. Desnos.[1] The patient, while suffering from gonorrhœa, complained of feeling ill. After a few days of this the discharge lessened considerably. He was then seized with shiverings, intense fever, great pain in the lower extremities, settling in the knees and hips, yielding after a few days and then reappearing, but with less intensity, in the shoulder and neck. After suffering in this way fifteen days at home in bed, he was admitted into the hospital, when it was found that the pain in the joints had almost disappeared; the left knee had, however, increased in size, and there was a small quantity of fluid in the joint. There was a bellows murmur at base with first sound, and a weaker sound at the apex, which was clearly a repetition of the first bellows sound at the base, the latter being indicative of aortic narrowing. Ten days after admission he was seized with alarming syncope, became suddenly pale and threw back his head; the pupils were dilated and the eyes convulsively turned upward. The respiration grew quick and then slackened; the beating of the heart became weak, and was next *suspended for twenty-five to thirty seconds*. After this the patient gradually recovered, clonic convulsions ensuing for some seconds. Attacks of this kind increased in frequency till they got to be as many as twelve in an hour; then they declined and gradually ceased. In an interval of freedom, examination of the heart showed rasping sound at base, pointing to insufficiency of aortic orifice; the patient left with the abnormal sounds lessened but still present.

After this comes a case of endocarditis by M. Marty, forming part of a valuable memoir[2] on this affection. The case is detailed at great length, the readings of the temperature, etc., being fully given. The patient was admitted for gonorrhœa. Five weeks after entry he was seized with violent shivering, intense cephalalgia and sleeplessness. A few days later the heart-sounds were found to be strong, and three days after this a rasping systolic sound was heard at base. Case treated with blistering, nitrate of potass, and tincture of digitalis. Vomiting, however, and anorexia supervened, and were followed by palpitation, pre-sternal pain, weariness and backache, for which quinine and digitalin pills were ordered. Considerable amelioration took place, but at the close of the narrative the discharge had returned, the palpitation was still pronounced, and the sound had softened little. There was no rheumatism.

Subsequently to the appearance of M. Marty's memoir another case, endocarditis, was reported[3] from the practice of M. Desnos. The patient,

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[1] Progrès médical, December 12, 1874. Quoted by Marty, Morel, etc.

[2] Archives Générales de Médecine, tome ii., p. 660. 1876.

[3] Gazette des Hôpitaux, p. 1067. 1877.

a man, age not stated, was admitted into La Pitié for acute bronchitis. After a few days he complained of sharp pain in the left shoulder, and, as it began to abate, of pain in the left sterno-clavicular articulation. He was then found to have gonorrhœa; he had never before had rheumatism. The pain proved obstinate, and during treatment the patient was suddenly seized with rather violent dyspnœa and palpitations, the bronchitis having about this time somewhat improved. The action of the heart became tumultuous and irregular, and at the apex a trilling sound, *bruit de roulement*, was heard, indicative of narrowing and insufficiency of the mitral valve. The patient lost strength, and fever appeared with great thermometrical oscillations; finally asystolism came on, defying all the efforts of M. Desnos to conquer it. In proportion as the radial pulse became weak and very small, so did the inferior extremities, and toward the last even the hands, become œdematous, there being however no albuminuria. The double bronchitis, which had for a time improved, now relapsed and took on the form of œdematous congestion, revealing itself by dyspnœa and numerous subcrepitant rattles on both sides of the chest; the asphyxia, which had crept on slowly at first, made rapid progress now and carried the patient off in about a month from the date of his admission. At the autopsy it was found that both lungs were red, not collapsing when the chest was opened, and exuding on pressure a pale red liquid. The pericardium was healthy, but the mitral valve presented, at a few millimetres from the free edge of its anterior process, a vegetation the size of a lentil, calculated to hamper the play of the valve and explain the trilling sound heard during life; there was also a grayish vegetation closely adhering to one of the aortic valves by the inferior surface, while on the superior aspect there was another vegetation not less adherent, of the same size and of a grayish hue. M. Desnos considers that these vegetations were not altogether the result of a hyperplasia, but that coagulated fibrin played a considerable part in their formation. The aortic valves were altogether insufficient.

A twelfth case, endocarditis, is reported by M. Emile Morel.[1] The patient had gonorrhœa and gonorrhœal rheumatism of the left sacro-iliac articulation, and then of the right tibio-tarsal, and of the metacarpo-phalangeal joints. Fourteen days after admission slight bellows murmur with first sound and at apex, base normal, some degree of rubbing sound. The latter began to abate within a week, but the bellows sound became rougher; feeling of oppression, occasional palpitations, pain in drawing full breath and nausea followed. The murmur with first sound and at apex became more intense, and was complicated with gradually increasing murmur at base, which continued to get worse for quite a fortnight after, at the close of which time the tracing but not the stethoscope pointed to

[1] Op. citat., p. 27.

aortic incompetence. After this the patient began to improve, and in about a fortnight left with the sound at base much diminished, that at apex almost gone.

The thirteenth case, endocarditis, is by the same gentleman.[1] Within three weeks from the time of contracting gonorrhœa the patient had gone through double conjunctivitis, gonorrhœal rheumatism of right foot and knee, left knee and right tibio-tarsal joint; and at about the close of the three weeks was found to have rapid sound (*bruit de galop*), and hypertrophy, the apex acting in the sixth intercostal space; bellows murmur at both base and apex, synchronous with first sound. Three days after, trilling murmur at base masking first and second sound; sphygmograph tracings showed marks of aortic insufficiency. These symptoms gradually disappeared, and at the end of about three weeks the murmur at the base was gone, and only a little mitral insufficiency remained. A fortnight later the patient left.

The fourteenth case, also endocarditis, is by M. Baudin.[2] The patient was attacked in the tenth week of his gonorrhœa with palpitation and increase in area of cardiac dulness; murmur at base involving close of first sound and whole of second. Next day but one violent shivering, rasping character and loudness of murmur; a rumbling, fremitus, detected on placing hand over cardiac region. Temperature, 104°; pulse, 100. The patient recovered quickly under the operation of digitalis infusion, opium, castor-oil, and blistering. As in the cases of Marty and of Lacassagne, there was no rheumatism. M. Hervieux gives[3] another case of what he simply calls gonorrhœal heart affection. One of endocarditis following severe gonorrhœa and bad gonorrhœal rheumatism is related[4] by M. Meuriot. Shivering set in attended by delirium, a singular and threatening form of purpura, and vomiting. After death the mitral valve was found coated with warty vegetations, particularly at its free edge; there were also a few on the tricuspid valve. The case is doubtful, the patient, a young man, evidently a most reckless, dissipated person, having been exposed to sufficient inclemency of weather to set up ordinary rheumatism and endocarditis. Dr. Pye-Smith found systolic bruit at base, in a man, relieved after three months' stay in the hospital. He thinks it possible that the sound was purely functional, especially as there were no symptoms of organic disease of heart. Mr. Davies-Colley gives[5] one of pericardial inflammation, not severe, ending in recovery, and one[6] of systolic bruit at base, only presumably gonorrhœal. He also refers to two if not three specimens, in Guy's Hospital Museum, of valvular disease associated with gonorrhœa, but the evidence of the connection is again incomplete, and I have therefore only admitted the first case.

[1] Op. citat., p. 29.
[2] Recueil des Mémoires de Médecine, p. 530. 1879.
[3] Op. citat., p. 355.
[4] Gazette des Hôpitaux, p. 1. 1868.
[5] Op. citat., p. 190.
[6] Obstetrical Journal, p. 160. 1878–79.

Out of these sixteen cases, then, two proved fatal, and some of the others were of a very threatening nature; such symptoms, too, as some of the patients suffered from when they left the hospital, prolonged rough state of the first sound and mitral insufficiency, are of a very disquieting kind. M. Marty, indeed, considers endocarditis set up in this way to be just as dangerous as the idiopathic form. M. Voelker's second case, though quoted by Marty, Morel, etc., I cannot find in the only edition of his essay which I have seen. His eighth "observation" is mentioned by some authors as containing the particulars of this case, but I see nothing of the kind, and Voelker expressly says there was nothing wrong with the heart and lungs. All the cases seen abroad but two, those recorded by Brandes, occurred in France; all the patients were males, and their ages ranged from twenty-three to fifty, so that time of life counts for almost nothing. Except in the case communicated by M. Baudin, it is very doubtful whether treatment influenced the issue much more than mere rest would have done. Although I have ranged cardiac disturbance among the complications of rheumatism, the reader will have noticed that, in three of the cases the latter was not present at all; but to have taken these as a separate division, would have been over-refining for the mere sake of system. A defect, similar to the above attaches to the arrangement of pyæmia among the complications of gonorrhœal rheumatism.

c. *Gonorrhœal Meningitis.*—Several years ago I had under my care a case which interested me. The patient had intercourse with a girl who gave him gonorrhœa. He went into the country with this discharge still on him, and was there attacked by rheumatism, which, according to the surgeon who attended him, flew to the brain, and of this he quickly died. Previous to this he had several times consulted me, and I know that he never had gonorrhœa, rheumatism, or brain affection. The sequence of events led me to wonder whether gonorrhœal rheumatism had in this case attacked the dura mater, as it almost certainly did the sheath of the spinal cord in another case, but I could find nothing which threw light upon the matter till I came upon a case quoted by Tixier from M. Fontan. In this the patient, after his gonorrhœa had lasted three weeks, was seized with rather sharp pains in the wrists and right knee, accompanied by redness and swelling of the affected parts. There was also fever, the skin was hot, and there was loss of appetite. The second day after admission the right instep was assailed, and on the night of the next day he was disturbed with vivid dreams, and got out of bed several times without any reason; in the morning he complained much of his head, but was perfectly rational. The next evening he was extremely excited and talked incoherently; eager expression of face, constant jerking of limbs, restraint necessary to prevent him getting out of bed. Pulse 108; body bathed in perspiration. The agitation and rambling continued the next day, with repeated attempts at swallowing, cramp of upper limbs, and dilatation of pupils. These symp-

toms soon culminated in extreme loquacity, disturbance of the intellect to the degree of its being impossible to extract a rational answer from him; disordered movements of the limbs, trembling of the hands accompanied by dryness of the tongue, heat of the skin, and profuse fetid perspirations. The pulse 140; involuntary and very free discharge of urine. The day after, however, he began to improve; he had had a quiet sleep, and the pulse had fallen twenty beats. In the evening he replied more coherently to questions, and consented to take food, which he had previously refused to do; the pupils had regained their normal condition. Two days later the pulse had fallen to 80, and there was less perspiration; the day after that he began to realize his position. The patient had two or three slight outbreaks of pain in the joints, and once a threatening of some return of the head symptoms; however, thirty-two days after admission he left the hospital, well advanced on the way to complete recovery. The treatment consisted in the use of Dover's powder twice in the evening, accompanied and followed by draughts of nitre and dandelion, quinine with opium every two hours, purgative enemata, sinapisms and blisters. M. Morel quotes a case related by Messrs. Desnos and Lemaistre, of gonorrhœal rheumatism complicated with cerebral symptoms. A case of "troubles cérébraux," from the same cause, is also noted [1] as occurring in M. Ricord's practice.

d. *Gonorrhœal Myelitis.*—I have already mentioned a case in which the rheumatic affection certainly seemed to extend up the spinal cord, and M. Tixier gives [2] another. The patient, a young man nineteen years old, had suffered for ten days from violent gonorrhœal rheumatic pain in the shoulders, arms, and along the vertebral column, when all at once, without exertion, chill or any known cause, he found it impossible to rise, the legs being asleep; the day after, the pain in the limbs had disappeared, but he could not move the lower members at all. The day after this, date of his admission, it was found that there was almost complete paraplegia, the paralysis reaching to the attachments of the diaphragm; the legs were in a state of incomplete anæsthesia, but perfect analgesia. The bladder reached to the level of the umbilicus, the discharge from the urethra still continued. A week after admission the patient was cut off by cholera. According to Tixier [3] M. Ricord also saw a case in which paraplegia followed upon gonorrhœa.

e. *Gonorrhœal* (?) *Hepatitis.*—M. Tixier quite believes in this complication of gonorrhœal rheumatism,[4] and the case which he relates in support of his opinion deserves careful consideration. The patient, a man thirty-two years old, who had twice before suffered from gonorrhœa, and had contracted his present attack four months previously, had already been previously invalided fifteen days for it and orchitis, and now re-entered

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[1] Gazette des Hôpitaux, p. 2. 1868.
[2] Op. citat., p. 89.
[3] Op citat., p. 64.
[4] Op. citat., p. 62.

with a considerable swelling on each side of the scrotum, particularly on the left, the skin being red and almost erysipelatous. He was feverish and unwell, and had just been attacked with violent gonorrhœal rheumatism. The stomach was disturbed, the appetite lost, and the tongue coated. He had a jaundiced tint of very characteristic kind ; the region of the liver was rather sensitive, and the gland somewhat encroaching upon the false ribs. On the day of entry he twice had bilious vomiting. Ulceration and sloughing having ensued at a prominent part of the scrotal swelling, the patient was removed to a surgical ward, the icteric hue still prevailing. The lesion of the scrotum being healed, the patient left at the end of something like five weeks later, the jaundice and sensibility of the liver being then gone.

f. *Gonorrhœal* (?) *Nephritis.*—M. Hardy mentions[1] a case in which gonorrhœal rheumatism was accompanied by nephritis, as manifested by albuminous urine, paleness, and anæmia.

g. *Gonorrhœal Pyæmia.*—Two cases of this kind, ending fatally, are reported[2] by Dr. Charteris. The first is that of a lad seventeen years old, suffering under his third gonorrhœa, accompanied this time by retention of urine, who was admitted into the Royal Infirmary at Glasgow. Fifteen days after admission he was attacked with shivering, followed by rise of temperature and pains "in all his bones." Pain and redness also came on in the right ankle and knee ; there was likewise pain in the left shoulder, which soon became intense, but no redness or swelling. Treatment seems to have been quite powerless, the suffering was not relieved, profuse sweating set in, the breath acquired a hay-like odor, and the patient died six days after these complications had begun. At the autopsy, on opening the swelling at the left shoulder, a quantity of grayish yellow pus escaped. The periosteum was found to be separated along the whole length of the left clavicle except at the extremity. At one point the pus had made its way through the periosteum and diffused itself among the cellular tissue of the neck. The articulation at each end of the clavicle was healthy and not opened into. The right shoulder-joint contained some similar gray pus. There seems to have been nothing which accounted for death.

In the second case the patient, a man, was thirty years old. The gonorrhœa had lasted two years, almost disappearing when the patient abstained from stimulants, and returning so soon as ever he took to them again. At last, wearied out with the persistence of his complaint, he decided to give them up altogether, and seems to have paid the penalty of his life for doing so ; though how such a step could set up the symptoms to be presently mentioned, how the effect can in any way be connected with the cause, is to me incomprehensible. Be that as it may, the patient's health

[1] Gazette des Hôpitaux, p. 1185. 1877.

[2] British Medical Journal, vol. ii., p. 711. 1876.

seems to have quite given way under the change to abstinence, for when Dr. Charteris was called to him he found him in a low state, presenting on the left forearm a well-marked patch of erysipelas. An abscess, which followed this, was opened. Two days after, the patient complained of excruciating pain in the left hip-joint; at the end of three weeks fluctuation was so distinct at the seat of pain that it was decided to open the abscess antiseptically, with the result of evacuating two pints of thin, gray pus. Fever, emaciation, and night sweats with high temperature now appeared. The operation was succeeded by great pain of a throbbing nature in the region of the liver, pointing to pyæmic abscess. The patient became greatly emaciated and gradually sank. He was never delirious, but during the last two days of life vision failed so completely that he was unable to distinguish light from darkness. His breath had the same hay-like odor as in the preceding case; the pupils were widely dilated. No post-mortem was allowed.

h. *Gonorrhœal Adenitis, etc.*—As another complication of gonorrhœa and gonorrhœal rheumatism, both in the declining stage, M. Féréol reports[1] a case of swelling of the gland under the angle of the right jaw of the most severe nature, movement of the jaw being very limited and exploration of the pharynx impossible. The swelling was opened and with the best effect, although no pus was found. Tixier saw two similar cases. In one,[2] after the discharge had lasted quite nine or ten weeks, the patient was admitted for quinsy and difficulty in opening the mouth, with pain on moving the jaw. Nearly two months after, pain in the left temporo-maxillary articulation set in, with difficulty in depressing the jaw. He was then readmitted with considerable swelling over the affected part, the skin of which was red as if erysipelatous, pressure inducing extreme pain. There was some little fever, but all the symptoms yielded quickly under the influence of rest, belladonna ointment, etc. Fournier saw a collection of serum, the size of an almond, on the dorsal aspect of the first metacarpal space after severe gonorrhœal rheumatism of the wrist in a man; it was cured by opening, under which it shrank and got well. Local neuralgia has also been noticed[3] as a sequela of gonorrhœal rheumatism, and M. Fournier quotes, as issuing from the same source, instances of muscular pains, lumbago, wry-neck, temporary diplopia, and partial deafness. The catalogue of results is, therefore, evidently enough, of startling dimensions, and gonorrhœa perhaps makes a wider and deeper impression on the system than has been usually thought. At the same time I have to add that most of these after-effects are quite unknown to myself, and the others excessively rare. To these may be added, for mere convenience sake, certain anomalous disturbances and sensations left behind by gonorrhœa, irrespective of rheumatism. Among these are enumerated itching, tickling, and

[1] Archives Générales de Médecine, tome ii., p. 208. 1866.

[2] Op. citat., p. 61. [3] Tixier: Op. citat., p. 64.

sense of crawling in the urethra ; tenderness on erection and making water, all remediable enough ; frequent desire to make water, which may last for life ; rolling of the testicles, mentioned, I believe, only by Lagneau and unknown to me ; loss of proper sensation on emission spoken of by Castelnau.

We have now to examine the machinery by means of which this obstinate complaint is called into activity. Mr. Erichsen, who divides [1] the complaint into the fibroid or plastic and the suppurative, thinks the former "is intimately associated with those forms of blood disease in which fibrinous exudations are formed in internal organs, more especially on the serous surfaces ;" but I never yet could make out that there is anything which can properly be called blood disease in either case. Mr. Bond considers [2] that it is due to absorption of a morbid material from the urethra, though he is "not prepared to explain" the exact way in which this process takes place. According to him, rheumatism so essentially depends upon the disease of the urethra, that the first condition of successful treatment is to set this canal in good order ; an excellent rule of practice, but subject to exceptions, for the rheumatism has been successfully combated [3] while the discharge was not treated at all, and relapsed after the rheumatism was cured. He finds the complaint often accompanied by congestion of the sclerotic, whereas Dr. Pye-Smith never saw this (sclerotitis) in rheumatic fever, gout, or typical osteo-arthritis. Mr. Bond also says it is most prevalent among the poor, ill-fed and anæmic, most likely because such states predominate in dispensary practice, of which he is speaking ; in private practice I have seen gonorrhœal rheumatism often enough among men both robust and well-fed.

With regard to any such conjectures, as that the complaint is due to metastasis of the gonorrhœa or its suppression by means of copaiba and injection, there is a short answer. The complaint occurs when no specifics have been given and no injections used. I have attended cases where the pain has come on within seventy-two, and even forty-eight, hours after the appearance of the discharge, and have even known patients uncertain as to which began first. The discharge is not unusually, if it be ever, suppressed by the outbreak of the rheumatism, but indeed there is no such thing as thorough suppression of the gonorrhœa in the usual sense of the word ; for what effects such a change cures the running, and very often the rheumatism cannot be subdued till the purulent secretion is got under. M. Voelker brings [4] evidence to show that the rheumatism may spring up, run its course and disappear, without the gonorrhœa being in the least affected ; and Fournier has never seen the discharge suspended. [5]

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[1] Science and Art of Surgery, vol. ii., p. 883. 1877.

[2] Lancet, vol. i., p. 396. 1872.

[3] Ibid., vol. ii., p. 265. 1860.

[4] Op. citat., p. 50.

[5] Nouveau Dictionnaire, tome v., p. 229.

M. Hardy says [1] it seems that when the gonorrhœa stops there is "une véritable metastase, comme un transport des matériaux morbifiques d'un endroit à l'autre." This is another specimen of that vagueness which has ever been the bane of medicine. Morbid materials may mean almost anything, and the first omission in this paragraph is that they are not distinctly specified. I will take the liberty of restricting the term to substances really known to exist. These are the pus secreted on the surface of the urethra, and the products of inflammation in the walls of this canal and the surrounding cellular tissue, such products being ill-conditioned lymph, effused serum, wandering cells and pus-cells; and I should be glad if we are to understand that these are transported to the knee or ankle, such frequent sites of gonorrhœal rheumatism; or if we should adopt M. Castelnau's suggestion [2] as to metastasis in orchitis, that it is the principle which is translated, and that this begins operations by infecting the whole organism. I should also be glad to know how the rheumatism is set up when there is no arrest of the discharge, and consequently no metastasis; though indeed the employment of the term here is an entire mistake. Metastasis means properly the cessation of a disease in one part and its outbreak in another; M. Hardy employs it to signify the conversion of a disease, during its passage, from a suppurative to a non-suppurative form.

M. Guerin feels inclined to believe that gonorrhœal rheumatism and ophthalmia are specially to be feared when the discharge is preceded by incubation; and Tixier thinks [3] that not only the beginning but the course of the disease is different, there being usually less pain in the urethra when rheumatism follows; and he expresses [4] the greatest astonishment at M. Rollet saying that the most general sign of gonorrhœal rheumatism coming on is abundance of discharge. According to M. Fourestié, Féréol noticed it in eight cases where the discharge was very mild. M. Fourestié himself maintains [5] that when it attacks a patient suffering from an old gonorrhœa, it runs in many respects a different course, there being no acute arthritis, no rheumatic fluxion generalizing itself. The attack wears all the characters of a chronic case, tends particularly to the synovial capsules, and is accompanied by pastiness and severe pain on pressure; symptoms not resembling those which accompany acute or subacute gonorrhœal rheumatism. I have failed to identify it with any particular form of gonorrhœa.

Some of the French medical men seem to be much interested in the question, of whether gonorrhœa here sets up a new diathesis or evokes a latent one, and draw a distinction between a diathesis and a predisposition. I must dissent unequivocally from the first proposition. I have examined hundreds of patients after gonorrhœa, and in no instance have I seen reason to believe that it affected the constitution in such a way as "acquiring

[1] Gazette des Hôpitaux, p. 1186. 1877.
[2] Op. citat., p. 202.
[3] Op. citat., p. 20.
[4] Ibid.; p. 31.
[5] Gazette Médicale, pp. 342, 409. 1875.

a diathesis" would infer; while there is fair reason for suspecting that it awakens a predisposition, because by no effort, no precaution, can either patient or surgeon avert the attack of rheumatism when once the gonorrhœa has begun. I do not see, too, how a diathesis can be acquired within seventy-two hours, and as to the distinction between this and predisposition, it seems to me that in the disease they mean much the same thing.

All that I can make out may be summed up in the following conclusions. Gonorrhœa rather rarely implicates the structures of animal life, and then chiefly the fibrous and serous tissues; the proportion in which the disturbance extends to these has not yet been satisfactorily determined. I only noticed such complications about once in every twenty-three cases, being in excess of that observed by M. Fournier; but whatever the ratio may be, I believe it to be entirely due to the occurrence, in a certain proportion of the population, *of gonorrhœal rheumatic*, not rheumatic, *diathesis*, which I must, all arguments to the contrary, look upon as two different things. I entirely dissent from the view expressed by M. Quinquaud [1] and M. Mauriac,[2] that the gonorrhœa, in some instances at least, intensifies or localizes a rheumatic disposition, having never seen an instance of such a process.

Prognosis.—Judging by my own cases, I should say that nearly every case of gonorrhœal rheumatism gets thoroughly well in time; in every instance where I have had an opportunity of examining the patient, the cure has been complete. But only too frequently I have had no such opportunity, having entirely lost sight of the patients, and some have given up treatment in disgust; while I certainly should not expect recovery in such a case as that mentioned at page 246, where symptoms of paralysis were setting in when the patient was last seen. M. Gosselin takes [3] a most unfavorable view of the matter. He says anchylosis is to be expected, because the natural tendency in this kind of rheumatism is toward destruction of the diarthrodial cartilages, which is necessarily followed by anchylosis, this being in consequence the most frequent termination in all cases of blennorrhagic arthritis. Erichsen is much of the same opinion. Davies-Colley thinks that in some cases there is plentiful development of fibrous adhesions, and that the cartilages are eroded. Duplay and Brun consider that the rapid disorganization of the principal elements of the joint attacked, the elbow far most frequently, is one of the most marked characteristics of acute gonorrhœal arthritis. It has often been found necessary to break up adhesion of the elbow, and even the hip-joint,[4] arising from this complaint. M. Hardy, on the other hand, considers [5] that cure is the rule, hydrarthrosis and anchylosis being less frequent. M.

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[1] Gazette des Hôpitaux, pp. 731, 732. 1875.
[2] Ibid., p. 297.
[3] Ibid., p. 1043. 1880.
[4] Ibid., p. 121. 1879.
[5] Ibid., p. 1186. 1877.

Maymou, too, looks upon the prognosis as hopeful, though the cure may be slow.

Among the patients at the old Dreadnought Hospital gonorrhœal rheumatism was often seen to assume a degenerative form, marked by structural changes in the ligaments, cartilages, and bones, and "peripheric, or interstitial, or fibrous anchylosis," occasionally following.

Treatment usually adopted.—The older method, as it might be called, of meeting this complaint was rather a failure. The usual run of remedies for rheumatism, including colchicum, iodide of potassium, alkalies, guaiacum and antimony, only too often exerted little or no influence over the obdurate disorder, and the patient was drenched with medicines, week after week, without obtaining any more relief than he would have derived from rest in bed. I believe now that the only good I did my patients, when employing this method, was by means of the sedatives which I gave them without stint. The more modern system, that with salicylates, seems to have been equally a failure. For instance, Dr. Herman Weber reports[1] a very unsatisfactory experience with "salicin and its congeners" in this affection. One patient was sick after every dose of salicin, salicylic acid, or salicylate of soda. One took, for two days, fifteen grains of salicin every two hours, and then for three days twenty grains of salicylate of soda every two hours, without obtaining more benefit than rest usually effects in such a lapse of time; it then became necessary to discontinue the remedy on account of nausea and giddiness. In a third case the pain and swelling in the joints and the pyrexia were much relieved after two days of this treatment, while the swelling of the joints and the state of the urethra were not materially influenced, there being here evidently a slight error in the report. In the fourth case, after three days' use of the salicylate of soda, twenty grains every two hours, the pyrexia, pain, and swelling were much reduced, the state of the urethra remaining almost unchanged. Dr. Weber's unfavorable experience is quite confirmed by that of M. Desnos,[2] as also by a case from the practice of M. Hardy,[3] the patient taking six grammes daily of the salicylate of soda, with no other result than the slight amelioration which rest alone would have induced. Brun mentions a case in the practice of M. Fernet, where the dose of salicylate of soda was carried to four grammes without any effect.

Proposed Plan of Treatment.—With the exception of the sedatives, an occasional dose of calomel and black draught, and blistering, in all of which I confess to great faith, I have long abandoned every item of the old treatment in favor of quinine, and as to the salicylates, I am quite satisfied with the trials which others have made. M. Maymou considers that quinine has failed. He does not state in what form or in what doses it was given, but in solution with sulphate of magnesia, and freely em-

[1] British Medical Journal, vol. i., p. 108. 1877.
[2] Gazette des Hôpitaux, p. 1067. 1877. [3] Ibid., p. 1185.

ployed, I have found it most useful. It seems to act much more decidedly on the complaint, and to suit the system better, when the calomel purge and black draught are taken along with it; in addition to which I never hesitate to recommend blistering and sedatives, of which large doses of liquor opii and tinctura opii seem to me to be much the best.

Early in February, 1874, I was consulted by a surgeon about a patient suffering from most obstinate gonorrhœal rheumatism in the ankle, knee, and back, which ankle and knee was not stated. The patient had first noticed the discharge about a week before he applied to the surgeon, and the rheumatism showed itself a few days after this. As he resided at a long distance I had no opportunity of verifying the dates, and at a later period, when I saw the patient, I omitted to do so. The running was reported to be most profuse, and accompanied by great soreness inside the urethra. It had remained quite unaffected by antiphlogistic treatment, potass, copaiba, and cubebs, singly and combined; nor did these remedies influence the rheumatism, the pain of which was so great that the patient had to take hydrate of chloral for weeks to get some sleep. The treatment of gonorrhœa laid down in this work was next tried; but with no better success. I recommended that the rheumatism should be combated as mentioned in the foregoing pages.

On the 22d of May I was called to see the patient, who had arrived in London. The discharge was so profuse as to drip from the penis when the wrappings were taken off. The rheumatism, described by the patient as being chiefly situated in the feet, which were greatly lamed by it, and also to some extent in the back, had yielded but very little, except in this respect, that, whereas it had formerly fixed itself also in the left knee and hip, and in the right shoulder, it was now restricted almost entirely to the parts mentioned. The patient was also suffering from ophthalmia with great sensitiveness to light. He now mentioned to me what I was not aware of before, that he had thirteen years previously had an obstinate gonorrhœa, which had resulted in stricture. This had been dilated, and up to the time of the second infection he had, at intervals, passed a pretty large bougie, in accordance with the directions given by the surgeon. He was thin and pale, very dejected in spirits, and suffering from indigestion, which he ascribed principally to the use of specifics; also from great irritability of the bladder. The pain from the rheumatism was so severe at night that he could not sleep without a sedative, and his appetite for natural food, never very strong, had quite left him. In the interval between the first and second consultations galvanism had been tried for the rheumatic pain, but a pretty long use of it had failed to do any good. On examining the urethra I found it very much contracted. The patient's age, I may remark, was about thirty-four.

I ordered this gentleman to drink a bottle of burgundy a day, and, if he could not manage that amount, to take as much as he could, to have a

large glass of good milk and the best rum every night on going to bed; a restorative diet, comprising plenty of fat ham and bacon, beef-tea with vermicelli or isinglass; to have quinine at first twice, and then three times a day, raising the dose as fast as he could possibly bear it up to three, four, or even five grains; to keep the bowels gently opened by means of an aperient pill containing colchicum, and, when a sedative was required, to take a full dose of bimeconate of morphia. For the rheumatism he was ordered to have a sulphur fume bath occasionally, and after that a vapor bath. During the next seventeen days the nitrate of silver was applied fifteen times, but very gently each time, to the stricture. At the end of this the patient left for the country, feeling, he said, very much better and stronger. The discharge had diminished, but not materially. The ophthalmia was a little improved, and for it his medical attendant was asked to drop occasionally into each eye a minim of solution of nitrate of silver. He was directed to blister the penis and perineum well, and occasionally to pass a bougie.

On the 22d of July the patient called to report that he was now comparatively a new man. The "discharge proper" of the gonorrhœa, as he called it, had quite ceased. The rheumatism, which had so completely defied what seemed appropriate means, had yielded to this strange treatment as his medical attendant seemed to consider it, and was dying out. He was free from any irritability of the bladder. He could eat and sleep better, and felt much stronger. The ophthalmia seemed slowly passing away. Beyond the occasional passing of a number ten bougie, which he could do very well, no other treatment than that mentioned had been adopted. He had continued the quinine, diet, and vapour baths; the sedative almost entirely given up.

Taking all things into consideration I thought any change would be injudicious, and therefore simply directed that the nitrate should be occasionally and very gently used, limiting the application to the seat of the stricture; that he should continue his wine, and, unless already sick of it, the rum and milk; that the quinine and colchicum should be resorted to occasionally, and that he should blister once more at any rate. I saw him again in the succeeding February, when he reported a decided amendment in every respect, the last vestiges of all except the stricture having now gone. This gentleman's case might well be described as truly deplorable; it had gone on above eight months without any improvement whatever, and yet the patient, who ought to know better than any one else, stated that he began to mend directly the treatment was changed, and that the improvement went on to the close without any halt or check; results which did not seem in any way likely to flow from the measures which I formerly suggested. His medical attendant seemed of quite the same way of thinking. The patient subsequently had another attack of gonorrhœa without rheumatism.

When the next case presented itself I resolved to trust entirely to the

quinine, merely supplementing it occasionally with an aperient, the more so as the patient had the strongest objection to blistering, and was rather refractory about taking sedatives, though he made no demur about what I should have thought was quite as disagreeable a remedy, that is to say the calomel purge and black draught. The quinine was accordingly begun in grain doses three times a day, and rapidly raised to four and then five grains, and answered exceedingly well. I had to interrupt it twice for a day or two on account of nausea, headache, indigestion, and diarrhœa, evidently due to the large doses of copaiba he had taken; otherwise the quinine was continued uninterruptedly. The patient made a good recovery, the case being, however, never very severe; pain chiefly in left shoulder-joint.

The next case was of a most severe character, the patient being straightway laid up with the pain which assailed both ankles and the right knee, obtaining its acme in this joint. I began at once with quinine, and carried the dose up without delay to six grains three times daily, using no sedatives, and ordering a calomel pill and senna draught only occasionally. The patient soon began to improve, and the recovery proceeded steadily, and at a rate which was certainly a great advance upon the old system. Both these patients were ordered a light warm diet, plenty of claret, carlowitz or burgundy as taste might direct, fortified by a glass of old port every day, and a glass of spirit and water or rum and milk at bedtime. Both recovered perfectly. Since that time I have treated in the same way, but using at the same time sedatives rather freely, every case which came under my care, though for some reason or other I have not seen so much of gonorrhœal rheumatism during the last five or six years. The results, however, of the cases which I have had, gave me every reason to believe that such remedies as hypodermic injections, galvanism, painting with iodine, drawing off the fluid, needle aspiration, kneading, vesication with nitrate of silver, belladonna pomade, laudanum poultices, sulphur fume baths, and mineral waters may one and all be dispensed with. At the same time it must be admitted that good cures, even in long-standing cases, have followed from drawing off the fluid from a knee thus affected and strapping the joint with mercurial plaster.[1]

From Voelker[2] we learn that puncture has rendered amputation necessary, but I should think that with proper precautions no such result need be feared. Demarquay, in cases marked by great pain, gave aconite and opium with excellent effect. He also employed immobility, as did Voelker, Bouilly, and Tixier, with exceptionally good results, the pain especially ceasing very quickly; but Brun gives a case where the apparatus could not be removed till the fifty-fourth day. Mr. Furneaux Jordan says[3] that

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[1] Medical Times, vol. i., p. 365. 1868. [2] Op. citat., p. 109.
[3] British Medical Journal, vol. ii., p. 202. 1868.

painting with nitrate of silver, carried almost to vesication, has removed gonorrhœal rheumatism of the knee in twenty-four hours. Mr. Davies-Colley found warm anodyne lotions relieve the pain.

19. Gonorrhœal Affections of the Eye.—*a. Ophthalmia. Pathology.*—Resembles ordinary purulent ophthalmia, except in its origin, which is due to the contact of gonorrhœal matter, numerous cases, showing this to be its source, being detailed by Lawrence [1] and others. According to Fournier contagion can only explain its occurrence; in 84 cases Flourent Cunier traced it to this origin in 47. It is more frequent in the right eye than in the left, four times out of five according to one observer, Pénanguer; and Fournier points out that it is the right hand which is so much the most frequently carried to the eye. Only seen, in the experience of some observers, along with urethral gonorrhœa, which explains its rarity in the female. Rarely observed in conjunction with gonorrhœal rheumatism. The conjunctiva is first affected, and thence, if unchecked, the inflammation extends to the other tissues. It is a very destructive form of disorder, but perhaps not more so than uncomplicated purulent ophthalmia. Considering the prevalence of gonorrhœa, it is a rare disease. As to its origin from the contact of purulent matter, I have only one observation to make, which is, that I believe in far the greater number of cases the pus never comes into contact with the ocular conjunctiva at all; indeed, though a few well-authenticated instances have occurred where pus was launched right into the eye, yet this accident must for obvious reasons happen but very rarely; and the probability is, that if the application of matter be the cause, it acts first upon the lids on which it is accidentally smeared, much as I believe in gonorrhœa the irritating vaginal or urethral pus is really only applied to the mouth of the urethra.

As to any gonorrhœal affection of the eye arising from repulsion, considering how often this idea has been refuted, it may now be assumed that it is sheer waste of time to argue with persons who make use of it; as well dispute with a man who denied the circulation of the blood, or that the earth moves round the sun. But the very act of running counter to all common sense and experience has a charm for some minds, and moreover these men are wise in their generation. They use a figure of speech patients can understand, or at any rate fancy they can understand, which serves the purpose just as well, and they save themselves the trouble of thinking. They begin with assertions which, having no other value, are clearly expected to derive weight enough from the fact of their being patronized by the speaker or author in question, and these assertions are supported by arguments which only need looking at to be condemned as faulty. Even were such a thing as repulsion conceivable, supposing any man able to realize Cullerier's theory that gonorrhœal matter is transported

[1] On Venereal Diseases of the Eye, p. 31. 1830.

bodily to the articulations, it could in no way explain those cases where the discharge is not checked, and where consequently there can be no repulsion. Yet these are so much more numerous that Sir William Lawrence, who necessarily treated so many venereal and eye affections, never saw a case of gonorrhœal ophthalmia where arrest of the discharge took place.[1] M. Tixier makes[2] a precisely similar statement. Nor is this any obsolete error which I am pursuing. The reader has just seen that, in reference to gonorrhœal rheumatism, the doctrine of metastasis is by no means given up; and whether the disease is driven from the urethra to a joint, or attracted to the eye from the canal, the process of translation must be the same.

Prognosis.—Always serious, the issue being too often unfortunate, especially, it has appeared to me, in the case of young persons of loose make and puffy, relaxed tissues; also among Irish patients of the lower class resident in London. When the patient is otherwise healthy, temperate, and attentive, there is a fair chance of his doing well, but the best treatment is constantly marred by indiscretion and apathy. In one case I found, at the very first visit, that the sight of both eyes was almost entirely destroyed, the patient having never applied for any advice.

Treatment usually adopted.—I do not see how it is possible, by any process of mental alchemy, to extract from the jarring opinions of those who ought to know best how to manage this disease, a single axiom of treatment which can be said to meet with general concurrence; and he who can explain, by any known system of pathology, how it happens that a specific affection, of definite course, is treated with equal success by means which weaken and by means which strengthen the circulation; by remedies which increase, and by remedies which lessen the cohesion of the blood; by quinine and antiphlogistic measures; by warm applications, and by ice, is gifted by far greater powers of analysis and induction than I possess. I therefore abandon the task as hopeless, and restrict myself to giving, in as condensed a form as I can, an analysis of the latest precepts of treatment laid down by some of our most eminent teachers.

Mr. Lawson's consists of tonics,[3] one item being quinine in two-grain doses every four hours, diffusible stimuli and liberal diet. If there be great pain or irritability, he gives opium at bedtime, and when there is much heat of the skin, thirst and furring of the tongue, ammonia in an effervescing form. His local applications are nitrate of silver solution, ten to thirty grains to an ounce of distilled water, dropped in once or twice a day, and a solution of six grains of alum, or one grain of sulphate of zinc and three of alum, in an ounce of water, to wash away the discharge. A fold of linen, wetted with iced water, is laid upon the eyelid and changed every

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[1] On Venereal Diseases of the Eye, p. 33. 1830. [2] Op. citat., p. 51.
[3] Practitioner, vol. i., p. 342.

time it gets dry. But as early as 1859 Mr. Hancock treated the disease with these doses of quinine. In the *Lancet* for that year [1] two cases are reported under his care, one in which a similar dose was given every four hours, conjoined at first with opium, this being subsequently withdrawn, as it did not seem to agree; and another where the same quantity was ordered three times a day, accompanied by a full diet, the result being highly gratifying in both cases.

It is therefore calculated to excite no little surprise, when we find the disease treated quite as successfully by Mr. Adams [2] with means so diametrically opposed as bleeding, leeches, calomel, and opium; and "almost invariably cut short" by Mr. Collis [3] in "twenty-four hours" with a half grain solution of nitrate of silver, used very frequently, to the entire exclusion of all medicines. As to the bleeding recommended by Mr. Adams, it seems but another word for almost certain mischief; the only inference to be drawn from the horrors recorded by Wardrop, Lawrence, and others, is that at least half the victims to the destructive influence of antiphlogistic treatment lose their sight; while we may be permitted to inquire whether any beneficial influence, which it might be supposed to exert, was not really due to the rest, darkness, abstinence from stimulants, and cleanliness which were enforced at the same time. That it ever stayed the course of the disease for an hour I very much doubt. Thus, for instance, among many cases of utter failure, Sir William Lawrence gives [4] one where, though the patient was bled four times, cupped on the back of neck and temple, dosed with tartar emetic so long as it could be borne, purged, and kept on low diet, "no sensible effect was produced on diminishing the violence of the inflammation or arresting its progress."

Mr. France, in a highly practical paper,[5] specifies the treatment at Guy's Hospital as consisting in division of the external canthus, daily depletion by scarification and leeching, the use of a six-grain nitrate of silver collyrium, unceasing ablution with poppy-water and alum, and the internal use of a mercurial such as Plummer's pill, quinine, and a moderately nutritious diet. Mr. Bader's treatment, as communicated to the British Medical Association,[6] consists in applying to the entire surface of the conjunctiva an ointment composed of red oxide of mercury, sulphate of atropin, and vaselin in the proportions of one grain, a fifth of a grain, and a drachm. The ointment is thrust, under chloroform, beneath the upper eyelid, both eyes being bound up with lint thickly smeared with the ointment.[7] The treatment seems to have been very successful. In one case, where the eye was nearly lost, the most gratifying results were derived from the use in this way of daturin and nitric oxide of mercury, a fifth of

[1] Vol. ii., p. 287.
[2] Ibid, vol. ii., p. 28. 1859.
[3] Dublin Quarterly Journal, vol. xxxiiii., p. 177.
[4] Op. citat., p. 71.
[5] Guy's Hospital Reports, third series, vol. iii, p. 185.
[6] British Medical Journal, vol. ii., p. 780. 1880.
[7] Lancet, vol. i., p. 675. 1880.

a grain each to an ounce of vaselin, the quantity of the mercurial salt being afterward increased to a grain. According to Dr. Marcus Gunn,[1] an iced compress or iced alum-water is kept constantly applied over the lids of the inflamed eye, and a solution of chloride of zinc, gr. ij. to ℥ j., is dropped into the eye from three to six times in the twenty-four hours according to the amount of discharge. The sound eye is protected by a Buller's shield. In the event of localized corneal haze, cold poppy lotion is used instead of the iced compress, and solution of sulphate of eserine, gr. ij. to ℥ j., is dropped in six times daily. He does not find that the chloride of zinc sets up the irritation which might be expected ; he speaks highly of the action of eserine in true deep gonorrhœal ulcer. Mr. George Critchett, in a case[2] which seemed desperate, slit up the upper eyelid as far as the margin of the eyebrow, and painted the affected surface three times a day with solution of nitrate of silver, gr. xxx. to ℥ j., with the best effects. M. Dor mentions[3] a case in which extraordinary success attended the use of solution of benzoate of soda, first recommended I believe for this purpose by Mr. Graham Browne, one part in twenty, and solution of tannin, one in ten and one in a hundred. The patient was suffering from double purulent ophthalmia, but was relieved the next day, and was completely cured in five weeks, *the cornea remaining intact* (!).

Proposed Plan of Treatment.—The heading here is only adopted in order to preserve uniformity of plan, as my experience cannot for a moment compete with that of gentlemen attached to eye hospitals. Yet the treatment to be mentioned rather than advocated seemed to answer fairly well in the comparatively few cases where I employed it ; indeed I did not observe that it failed when the patient began with it early enough, and attended properly to the instructions given him. But any statement of this kind is to be coupled with the reservation that there are two sources of fallacy here which must not be overlooked. One is that men, who are even getting on very well, are easily persuaded by their fears or their friends to go to an eye-hospital ; another is, that very possibly the worst cases are always taken there from the first, circumstances which invalidate any general conclusions.

The internal treatment consists of free use of sesqui-carbonate of ammonia in infusion of cascarilla or snake-root, a calomel pill and black draught every second or third day, and opium if there be much pain, one or two grains every two or three hours till the pain and uneasiness are thoroughly checked, sometimes adding a very small quantity of calomel to each dose ; the diet light and warm. But I could not undertake to say that these are even necessary, as I have never trusted to internal means alone, relying chiefly on the nitrate of silver in solution, four grains to the

[1] London Ophth. Hospital Reports, vol. x., p. 80. 1880.

[2] Lancet, vol. i., p 524. 1880.

[3] Lyon Méd., March 7, 1880. Quoted in London Med. Record, p. 241. 1880.

ounce, ordering it to be dropped in two or three times a day, and raising the strength rapidly till even the solid nitrate was borne.

If there be any chance of destruction of the cornea, free incision should be resorted to. At the same time I wish it to be understood that I recommend this step solely on the authority of others, and that in my own practice the necessity for it has never arisen. It seems, however, pretty certain that the practice is safe enough. M. Robert tells us,[1] that M. Sansun used, when there was much chemosis, to excise all the conjunctiva of the eye (toute la conjonctive oculaire) and cauterize the bleeding surface with nitrate of silver, and this with a result which surpassed his expectations. Complete excision of the chemosis with curved scissors had indeed been recommended in Lawrence's day, but he considered[2] it impracticable, and doubted if it had ever been performed. Mr. Tyrell, who was a very good practitioner, used to incise freely.

Of external applications I have little to say. I have myself never used any but an evaporating lotion, containing solution of the acetate of ammonia and spirit of wine or ether, in camphor mixture or elder-flower water, applied to the forehead and eyebrow by means of a single fold of linen. I believe this to be as useful as any such means can be, the application being often very grateful to the patient; in so far, too, it aids the nitrate, but only to this extent, its curative power being, I believe, next to nothing. I never myself saw inoculation of the sound eye from the affected one take place. In the very few instances of double ophthalmia which have come under my notice, I could make out nothing of the kind. Dr. Charles Taylor, however, observed it in three out of six cases, and recommends[3] a more speedy method of protecting the sound eye than is afforded by Buller's shield, which requires some little time to make. He uses a pitch plaster which extends over the eye and for some little distance beyond. In the centre of this is a hole for vision, which again is guarded by means of a piece of muslin or lace.

b. *Gonorrhœal Iritis, Pathology.*—May or may not be accompanied by gonorrhœal rheumatism, seen once by Ricord without joint affection, and in one eye by Fournier in a patient suffering from mild gonorrhœal ophthalmia in the other eye. May alternate with the arthritis. Generally seen in only one eye, and when it assails both, one is affected after the other. It attacks principally the iris and other internal structures, and is *not* accompanied by purulent discharge from the conjunctiva. The late Mr. Robert Taylor, in a brief memoir on these affections which he drew up for me, described it as very rare. It is quite unknown to me. A case, apparently of this disorder, is reported in the *Gazette Hebdomadaire* for 1874.[4]

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[1] Op. citat., p. 244.
[2] Op. citat., p. 46.
[3] Medical Times and Gazette, vol. i., p. 360. 1876.
[4] Page 749.

Prognosis.—Seems to be favorable, but cure may be very slow. Fournier says weeks may elapse before resolution begins. Of the treatment nothing very special is said, and I have no remarks of my own to offer.

c. *Rheumatism of the Eyeball* (*Sclerotitis*), *Pathology.*—Affects the sclerotic, iris, and other tissues; rather a common disorder, occurring in the proportion to purulent ophthalmia of 14 to 1, almost always accompanied by gonorrhœal rheumatism, though sometimes the eye alone is affected, Ricord having seen several such cases, Fournier three. Pye-Smith found it 7 times in 29 cases of gonorrhœal rheumatism. Most frequently accompanies rheumatism attacking several joints, Fournier having met with it thus 23 times out of 27 cases, while out of the remaining 4, 3 occurred with monoarticular rheumatism and 1 with sciatica. Generally attacks both eyes. First made clearly known by Ricord, though Rollet claims[1] to be the first who connected this variety with gonorrhœal rheumatism, which, according to him, it accompanies about once in every ten times. It is not dependent for its existence on weather, habits, or a first attack of gonorrhœa, for it has been known to recur four or five times in the same person. This form, accompanied by purulent discharge from the conjunctiva, is the only affection I am familiar with, arising constitutionally from gonorrhœa. I have not seen it in the female. The restriction of the disease to the male sex is denied by M. Robert,[2] who maintains that it may be seen in women.

Prognosis.—Favorable. I never found the affection destructive to the eye in my practice; in point of gravity is widely different from pure purulent ophthalmia. Mr. Holmes Coote, however, gives a case clearly arising from this source, in which the patient, when last heard of, was lying in a darkened room, with the eyesight quite unfit for useful purposes, and in a questionable state as to ultimate recovery.

Treatment.—Simply that of gonorrhœal rheumatism, supplemented by the daily dropping in of weak nitrate of silver solution; if the patient will allow it, *the lids* should be *brushed over with the same fluid.* Free use may be made of spirit lotions over the eye. With all possible care, the cure is apt to prove tedious.

d. *Aquo-capsulitis.*—Described I believe only by Fournier, seen but once by Tixier. Slight or moderate injection of conjunctiva; cornea intact, transparent; a little bulged in front, more brilliant than usual; sometimes tufts of deposit on posterior surface quite close to this, and not in any real connection with iris; smoked murky look of anterior chamber, most likely due to aqueous humor being somewhat charged with morbid secretion; blood may be effused into it, but both cornea and iris are intact; vision slightly confused, objects seen dimly and as it were enveloped in a cloud; no subjective symptoms or only a feeling of stiffness and fulness of eye; photophobia rare, and always slight. The prognosis seems to be favorable; of the treatment I see no particular account.

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[1] Op. citat., p. 75. 1869.

[2] Op. citat., p. 156.

20. Strong Tendency to Bleeding is the last of these complications. All those persons I have seen affected with it had suffered from the disorder of the liver. The mildest injections produced bleeding from the urethra, and I was obliged in all cases to abandon them until this tendency gave way, which it generally did in a little while under the use of aperients and tincture of steel. The gonorrhœa was very mild in these patients. This bleeding is not like that from injury to the urethra; it is a slight but very persistent trickling.

The bleeding generally seen, that is to say the much more common form, is, in nine cases out of ten, due to neglect and want of rest. The conditions under which it generally occurs point so clearly to the treatment required, that I should scarcely have thought it necessary to say more than that they are comprised in three words—rest, cold, and pressure. Mr. Cooke, however, mentions a case where the surgeon injected tincture of iron into the urethra to check the bleeding, and succeeded in doing so, but at the same time coagulated the blood into such a firm plug that an opening had to be made behind it to let the urine out! So that it is necessary to give due notice that this at least should *not* be done.

CHAPTER VII.

PATHOLOGY AND TREATMENT OF GLEET.

Pathology.—To describe the symptoms of this stage of the disorder, to say that it is the declining and last phase of gonorrhœa, and to refer its persistency, when obstinate, to some constitutional taint, and especially to scrofula, long formed the staple of what authors had to tell on the subject. But indeed it was not then an easy subject to investigate, and even now requires time and opportunities which every one cannot command. There being no strict pathological basis to go upon, I have been accustomed to adopt an arbitrary one, and to divide the affections comprised under the name of gleet into—1. Gonorrhœa of long standing, usually owing simply to neglect. 2. Inveterate gonorrhœa, which is merely the same disorder in a more rebellious form ; generally a result of combined neglect and mismanagement. 3. Gleet, or muco-purulent gleet, the name being adopted solely for the sake of distinction. To these I have for some time added—4. Prostatic gleet. 5. Pure mucous gleet. These are all viewed merely as so many stages of the same process, the outcome of one simple specific disease ; prostatic gleet marking the extension of the gonorrhœal action to the follicles of the gland, and simply complicating the subject, not affecting its intimate nature. It is to be remembered, too, that any such arrangement as that above is only useful as a guide to treatment ; no classification of gleet has been or is likely to be enduring.

1. Gonorrhœa of Long Standing.—In the first of these divisions the disease is characterized by the constant presence of a small quantity of muco-purulent discharge, especially on rising in the morning. The amount is generally not great, and the disorder is unaccompanied by much chordee or scalding, though there may be tenderness of the passage. Often the disease is so limited to the anterior part of the urethra that local means, applied to this part of the canal, suffice to cure it ; sometimes we encounter much the same condition as in the next class. I presume Nöggerath would call this latent gonorrhœa, and Hennig evidently thinks[1] that the term is fitly applied to a tender irritable state of the urethra, when only a drop of "gleet juice," tripper-saft, can be squeezed out by pressure.

2. Inveterate Gonorrhœa.—The case is more severe in the second class,

[1] Deutsche medizinische Wochenschrift, S., 673. 1879.

which is not unfrequently accompanied by some scalding and pain, the latter often most marked opposite the junction of the under side of the penis and scrotum ; if recent, often combined with stricture, but if of some standing, as eighteen months to two years, there is usually none. For if stricture do come on in these bad subjects, it soon becomes so marked as to make the diagnosis quite certain ; if at the end of six months the canal remains quite free, my experience is that it will be equally free at the end of a year. We often find tender spots in the urethra, one perhaps near the lacuna magna or occupying its floor ; one near the bulb, a very frequent seat ; and sometimes one of pretty large extent, but not much marked sensibility, at the anterior end of the prostatic urethra.

Such spots are not large, and often the tenderness is so slight that the patient does not suspect their presence till the surgeon passes a bougie, which soon reveals their existence, and sometimes discloses their morbid nature by bringing away a small clot of mucus from their surface, or dislodging threads of epithelium which are afterward passed with the urine. These clots are generally to be found near the bulb, and I have seldom met with more than one at a time. Their shape is irregular, and their bulk not usually greater than that of the smallest pea, often much less, but I have now and then seen one as big as a small hazel-nut. In muco-purulent gleet and prostatic gleet, these tender spots are sometimes the sole evidence that the original disease is not entirely cured, and incontinent men may remain dormant for years till called into activity by connection and excesses at the table. The pain and the obstinacy of the discharge in this variety are sometimes referred by the patient to chordee or over-injecting.

3. Muco-purulent Gleet is shown chiefly in the occasional appearance of a drop of mucus, whitened by a slight admixture of pus, often with appearance of shreds in the urine ; almost invariably associated with more or less stricture. Sometimes pricking pains in the urethra are complained of, and there is often a history of treatment long tried in vain. To this class of cases may be added those where the discharge is thin, or seems broken up, as if some portions of it were more consistent than others, or is slightly colored with brown.

4. Prostatic Gleet.—This variety arises from two causes, one being that of boys at school playing tricks with themselves, the other is the extension of gonorrhœa backward. When the discharge is fairly established, I know of no tests by which gleets arising from these different sources can be distinguished. In cases where it has not resulted from infection the discharge is often of a more mucous character, but I have seen numerous instances of identity of appearance from both modes of origin. I purpose, however, to deal here only with the gonorrhœal variety. The characteristic features are a small quantity of creamy discharge, usually constant, but occasionally absent at times for months, returning again and again even when no stricture is present ; shreds of epithelium showing in the

urine, especially that voided on first rising, and soreness with heat on passing a bougie even very gently. There may be other symptoms, such as sensation of heat on making water, shooting toward the buttocks, discomfort in the prostate after standing long, and sometimes on lying down or going to stool; but we may encounter the disease in a very intractable form without any symptom of the kind.

5. Pure Mucous Gleet.—This, the last division, is, according to my observations, much less common than any of the preceding, and is generally only a last and brief stage of a gonorrhœa cut short in a moderate space of time.

The discharge is pure transparent mucus, and is often noticed in much greater abundance after an erection. The lips of the urethra are sometimes red, but there may be no other morbid sign beyond the secretion, or at most only some tenderness of the passage. The patient frequently reports seeing damp stains on his linen, which occasion him much uneasiness.

Dr. Fessenden Otis arranges[1] the conditions on which the continuance of a chronic discharge from the urethra may depend as follows. 1. An enfeebled state of that portion of the mucous membrane which has been the seat of acute inflammation, the degeneration of the epithelium thus set up being continued by a state of enervation. 2. Localization of the disease in the deeper parts of the urethra, or in folds of the mucous membrane, or in the mucous crypts or follicles; conditions which we may encounter after those in the first section have been set right by appropriate treatment. 3. Granular ulceration in the canal, following complete exfoliation of the epithelium of the part attacked. 4. Alterations in the course and calibre of the urethra.

He, however, gives another cause not included in this list, and that is abnormal openings, bringing parts of the urethra into contact with the air. On one occasion he found two of these close to the meatus, one above the other, and about a quarter of an inch apart; they communicated with each other, and he felt confident that they also communicated with an ulcerated patch on the floor of the lacuna magna, though he could not establish the fact. In another case, that of a patient suffering from a little creamy discharge, there were two very small pustules on the glans, into the upper of which he could pass a probe, and then a hypodermic syringe carrying a solution of indigo. By placing a piece of lint in the lacuna magna, he satisfied himself of the communication, as the lint was stained. M. Diday describes a similar lesion in another part of the organ, namely the occasional appearance of a small hole in one lip or other of the mouth of the urethra; this is the opening of a mucous follicle running parallel to the urethra, and communicating with it. Down this tract a needle can

[1] New York Journal of Medicine, vol. i., p. 354. 1870.

be passed for some little distance. It is apt to become the nestling place of obstinate gonorrhœa, and, when it is so affected, pressure from behind forward will cause a drop of muco-purulent fluid to exude from it. At times the inflammation of the little follicle takes on an acute shape of some severity, but its prevailing character is obstinacy.

In persistent discharge, Dr. Otis says he is led to suspect a granular condition at some point or points in the canal, where, from abnormal activity of the morbid processes, the mucous membrane has been completely stripped of its epithelial covering, and from the underlying tissues coming to participate in the process, *ulceration has resulted* (!). At a certain stage in the declining inflammation, little papillæ sprout from the plastic lymph, which has been exuded to repair loss of tissue ; these papillæ he calls granulations. This granular condition is usually indicated by a local tenderness on pressure, or on passing a sound or ball-staff.

Dr. Otis examined the urethra by means of tubes of hard rubber, varying in length from an inch and a half to eight inches ; with the aid of reflected sunlight, as also that of Tiemann's lamp, burning kerosene oil, holding ten grains of camphor dissolved in each ounce. Though I do not observe him saying anywhere positively that he really sees this granular state, there is no other conclusion to be drawn. "Especially," he remarks, "is the meatoscope valuable in diagnosis of the granular condition of the urethra previously mentioned ;" and again, "the favorite seats of the granular ulceration of the urethra are in the natural expansions of the canal at the navicular and bulbous portions, evidently invited by the rich diffusion of crypts and follicles in the ample folds of these parts." This idea is upheld, as regards the seat of the disease, by Dr. Sands, in a paper read before the New York County Medical Society ;[1] and, as regards frequency of granular appearance near the bulb, by M. Rollet,[2] who, however, also finds granulation and granular ulceration in the prostatic region. Mr. Phillips only says, rather vaguely, that after death a white spot, resembling the cicatrix of an ulcer, is sometimes found in the urethra of a person who has suffered from gleet during life ; and, from the context, the seat of this lesion must be referred to the lower surface of that part of the canal which lies beneath the symphysis pubis.

While rejecting Dr. Dick's view, that many cases of gleet owe their persistence to a deviation in the urethra from its natural line, Dr. Otis assigns great weight to even a very slight contraction of the canal. He is of opinion that many of those cases when the discharge comes on from venereal excitement, or where it occurs in a few hours after exposure to infection, are due to stricture, and affirms, as an important axiom, that, "the slightest encroachment upon the calibre of the urethral canal is sufficient to

[1] Medical Record, p. 93. No. 274.

[2] Annales de Dermatologie, tome i., p. 110.

perpetuate a urethral discharge, or even, under favoring conditions, to establish it *de novo* without venereal contact." In a paper read before the Medical Society of London, many years ago, I stated my reasons for believing that gleet, complicated with deflection of the canal owing to perineal abscess, even when allowing a full-sized gum-elastic bougie to pass, is often very obstinate, and that stricture is by no means always at the bottom of recurrent gleet, as has been alleged. Finally, I may observe that gleet is sometimes cured without the complicating stricture being removed.

According to M. Desormeaux, as quoted by Fournier, gonorrhœa will disappear spontaneously from both the front and back part of the urethra while it continues in the vicinity of the bulb ; but as it contracts in extent it gains in depth. Instead of simply affecting the superficial layer of the mucous membrane, it attacks the whole thickness of it, insinuates itself into the follicles, and even reaches the subjacent tissues, bringing on induration, etc., thus constituting gleet. But in a great number of such cases I have found that, however free the anterior part of the urethra might be, behind the bulb was extensively affected.

The Endoscope.—What little I have to say on this part of the subject is borrowed almost entirely from others. My own trials, made with an instrument almost exactly like that of Desormeaux, kindly lent for the purpose, were few and imperfect ; but such as they were they thoroughly disappointed me, nor have I recovered faith. The exceedingly small surface illuminated, the dimness of the light cast upon it, the loss of time, and the discomfort a patient must necessarily be subjected to even by the most expert operator, are in my opinion insuperable obstacles to reliance on this instrument for our diagnosis. At the same time I wish to bear my testimony to the skill of the inventor, and to the careful way in which he has worked out the subject, giving an impulse to scientific exact investigation which has already yielded most valuable fruits.

Foremost among these stand the admirable labors of Herr Auspitz,[1] who has vastly extended the sphere of inquiry, and who considers that endoscopic examination has become a necessity, but not in acute gonorrhœa unless there is strangury, being then painful, superfluous, and even injurious. When the disease has lasted a few days, and is not accompanied by much swelling, it may be undertaken ; but even then can be postponed, and is only indispensable when the gonorrhœa has lasted from six to ten weeks, or comes back without manifest cause, as also in recently contracted cases *having none of the characters of the acute complaint.* He recommends examining with Otis' sound, to which I must object entirely.

Auspitz prefers to have the tube separated from the lighting apparatus, and uses for the latter a standing petroleum or gas lamp, without concentrating lens ; as reflector a concave mirror on a footstalk fixed by a fillet.

[1] Vierteljahresschrift für Dermatologie und Syphilis, 1 Heft. 1879.

He rejects the curved tube of Desormeaux, preferring straight tubes thirteen and a half centimetres long, which by manœuvring can be got into the bladder. The tubes are rounded at the far end, and brightly polished inside. When the bladder is to be examined, an obliquely set flat glass is used to keep the water off. There must be at least three diameter sizes of tubes, and different lengths are required. In some cases it is necessary to dilate the mouth of the urethra with the knife! To examine the navicular fossa only a short tube and strong light are requisite, the field of vision being cleared by means of a plug of Brun's wadding. The tube he now uses is really a two-bladed speculum, with a stem to guide and a lever to expand it, and funnel-shaped at the near end. The instrument is made of the finest steel, polished and nickeled, the handles and funnel being black to prevent disturbance from reflected light. By grasping the penis and instrument with one hand, and dilating with the other, the whole of the urethra can be seen as the instrument is shifted to and fro; he has never had the folds of mucous membrane get entangled in the valves. I must pass over his valuable observations as to the form the urethra assumes under this kind of examination, both in the natural and morbid state, so that in this respect the present epitome is highly incomplete. I must also omit his account of the endoscopic appearances observed by Tarnowsky, Fenger, Berkeley Hill, Grûnfeld and Gschirhakl, among which we repeatedly find a herpetic urethritis, a thing I have never yet seen, and pass on to Auspitz's own description of what he noticed. As text he takes the first form of gleet defined by myself, not complicated by stricture but embracing gleet of the prostate.

What he found in a number of cases was injection of the whole or parts of the mucous membrane, which, in the region corresponding to the corpora cavernosa, where it is usually rose-red, appeared of a dull flesh color, and dull red where it usually shows only of dull *reddish* hue, as near the bulb; at the same time the membrane appeared less shining. Along with this was noticed a change in the outline of the urethra, which would be unintelligible without reference to its normal shape under the endoscope, and is, therefore, reluctantly left out. Field of vision generally covered with mucus and threads of pus; sometimes in cavernous (spongy) part is seen a small yellow-white spot, in the centre of a round, oval, or irregularly shaped patch, yielding on puncture a little matter. The sound then enters a small pit, which can be recognized as one of Morgagni's follicles converted into a tiny abscess. Such a collection of matter may be the source of an obstinate relapsing gleet, and require puncture for cure. In uncomplicated cases the symptoms just mentioned do not usually extend beyond the bulbous part, but when the case is complicated there may be a hemorrhagic state of the mucous membrane in the prostatic part, with change of shape of urethra.

Such are the appearances most commonly met with; in more developed

cases there may be swelling of the mucous membrane of different degrees of intensity; the bulbous part usually most injected, the cavernous part being perhaps nearly returned to its normal state. There may also be changes in the structures of the bulbous part, the mucous membrane dull, moist looking and slightly puffed, giving appearance of little elevations which make the walls of the urethra mulberry or velvety looking. The dull look noticed in the bulbous part may also be seen in the spongy portion, not, as Desormeaux and his successors assert, in the shape of a solitary granulation islet, but not unfrequently in several connected patches; occasionally smooth patches covered with secretion are seen, or accumulations of epithelium near the mouth of the urethra. Appearances similar to those in the bulbous portion may also be found in the membranous and beginning of prostatic parts; but while an unhealthy spot only bleeds exceptionally at the bulbous, and very rarely at the spongy, part, a very slight injury will make the membranous portion bleed so as materially to interfere with examination. He is not satisfied that the dull places on the mucous membrane are due to loss of substance, but has observed that certain superficial ulcerations (exfoliations), dull depressions with a special reflected outline (dunkle, von einer eigenen Reflexfigur umschlossene Vertiefungen), are more frequent than in front. When these appearances are observed, the sensitiveness of the canal is much increased. Such a "find" (Befund) may also be observed in the prostatic part.

Auspitz does not consider granulation associated with contagion; the process thus called by Desormeaux occurs mostly in the bulb and membranous parts, may also be found in the spongy part, and near the mouth. The morbid change is most usually confined to an isolated and solitary part, but may be diffused over the whole of the spongy portion. He seems to have repeatedly found exfoliation of epithelium from the urethra. The granulations, or rather I should say what are wrongly called such, are found most frequently at what is so often the site of stricture, that is to say the bulb and membranous part; but he very properly rejects the view of Desormeaux that cicatricial strictures arise from ulceration of the granulations. I say very properly, as all I have observed leads me to believe, that in many instances at least the contraction takes place first and that the changes of stricture follow. Equally he does not allow that stricture can be traced to degeneration of the granular formations. The granular-looking swellings seen in the urethra are not necessarily referable to granulation. He considers simple catarrhal action sufficient to explain all that is seen in the canal, and the symptoms set up by catarrh are serious swelling, abnormally rapid growth and thickening of the upper layers of tissue, changes which penetrate deeper and deeper till they reach the submucous structures. The pathological effect of this is appearance of an uneven, granular grained surface. Even with stricture he found mostly hyperæmia, with swelling, spotty, grained state of mem-

brane and strong tendency to bleeding; not a stiff cicatricial connective tissue, but soft, loose, and compressible connective tissue, which, however, may clearly pass into the former, and this morbid change may extend all over the mucous membrane and even penetrate into the tissue substances of the cavernous bodies, thickening them and wasting their meshes.

Herr Auspitz totally and on good grounds rejects croupy, papillary, granular, follicular forms of urethritis. He thinks therapeutics have gained by the introduction of the endoscope; we shall be able to see a greater number of cases at the critical period between the catarrhal stage and the atrophic process. But except in the fact which he mentions, that relapse often means swelling of one of the follicles of Morgagni, which requires opening and touching at the edges with caustic, I do not see much which promises either practically or theoretically to yield better results than the treatment laid down in these pages, while there are some points of doctrine to which I cannot quite assent. For instance he fixes [1] eight weeks as the time for a gonorrhœa to be allowed to run before the endoscope is resorted to, which I consider much too long.

Dr. Amilcar Ricordi, of Milan, has contributed a highly practical and valuable memoir [2] on gleet of Cowper's ducts, of which he distinguishes two kinds; one in which the urethra, on pressure, yields two or three small drops of opaline fluid, of the density of white of egg, frothing on being rubbed between the fingers. Examined with the microscope this product gives mucous corpuscles, cellules of pavement epithelium, and amorphous liquid matter. Under the influence of sexual excitement, the secretion may become muco-purulent. The second form is simply what we call gleet, a little discharge appearing at the mouth of the urethra when the patient rises in the morning.

I do not know whether I render Dr. Ricordi's views correctly, as the paper is in some parts rather difficult to follow, but I understand him to say that in the first variety the ducts alone are involved, in the second the urethra participates. The shreds thrown out in true gleet of the ducts are cylinders of epithelium, casts of the ducts. There are always two of them, and they are covered with a very fine diaphanous membrane; whereas the shreds of stricture, slight catarrh of the bladder and newly cured gonorrhœa have no epithelial covering, and resemble rather little flakes or tufts than threads. The secretion from the ducts is also unlike that from the prostate, which consists of filiform concretions one or two lines long, fringed at one end, thicker and entire at the other, often accompanied by the presence of brownish bodies, which, on squeezing, yield polygonal cells and "brownish-clear" nuclei. Dr. Visconti twice examined the secretion of the ducts, and found in one specimen mucous corpuscles in mucine, some of them in a state of fatty degeneration, with cells of pavement epithe-

[1] Op. citat., p. 70.

[2] Giornale italiano, vol. ii., p. 129. 1874.

lium among them. In the second there were, in addition to these products, crystals of carbonate of lime.

Sometimes in this gleet, when the urine has passed the bulb, there is a slight hitch, and if an instrument be introduced the patient complains of a sense of heat. The sense of formication noticed in other forms of gleet, and even when there is no discharge present, as also the sensation of a drop of water falling from the bulb into the urethra, may be present in this variety; but the shreds are the pathognomic sign, and are always to be noticed on rising. If the patient make water before removing the drop of pus at the mouth of the urethra, or which can be made to appear there by a little pressure, they will be found in the vessel, and if the drop be first of all cleared away they are wanting. This form of gleet is apt to be extremely obstinate, and cannot be met by the ordinary means of treatment. Persistency of it he attributes to unusual length of the ducts, which he has found much greater in some pathological specimens than in others.

Ricordi mentions a case of this disorder, which I think supports the theory of there being a wide distinction between idiopathic and acquired purulent discharge from the urethra. It is that of a man in whom the affection had been brought on by long-continued venereal excitement without infection, and in whom it ran so mild a course, that Ricordi did not think fit to order more than a simple injection, whereas we have just seen how obstinate he found the affection when derived from gonorrhœa.

Prognosis.—Usually favorable in the long run when the case is properly treated. Even when complicated with stricture it may almost always be subdued. Prostatic gleet is sometimes very obstinate, as is that in which there is a history of deviation in the urethra, caused by unabsorbed deposit, the result of perineal abscess. In cases of sinuses communicating with the urethra and external surface, all treatment may prove ineffectual. The possible effects of such a contingency duly allowed for, I do not share M. Fournier's view[1] that gleet may endure for life. With all this its proverbial obstinacy has scarcely been over-rated.

Treatment. A. *In the Male.*—How then are we to master this refractory disorder? M. Ricord, looking to the possibility of having to spend his future existence in the land of the damned, seems to think that what he has most to dread is, not the discomfort of the abode, but the certainty of being plagued by the ghosts to cure them of their gleets. But if the contingency be an imaginary one for the next world, it is a reality here, and sometimes a very troublesome reality. At first sight nothing seems easier to cure than the gleet; yet few slight complaints are more difficult to subdue, and the number of remedies suggested by authors only proves how often all their resources have failed.

Some authors, Graves, Ricord, Whately, Phillips, Fournier, for in-

[1] Nouveau Dictionnaire, tome v., p. 150.

stance, candidly confess that they have met with instances where the disease did not yield to any treatment; but others are rather careful how they commit themselves to any very decided statements. The manner, however, in which the subject has been handled, leaves no doubt on the mind of the reader, that the authors in question are quite familiar with those obstinate cases which go on for months, or even years, till at last the patient gets so thoroughly sick of medicines, that he makes up his mind to endure an evil he cannot remedy. Or, perhaps, if the sufferer be an Englishman, he betakes himself to the quack, while the German starves and injects petroleum; recklessness, indeed, being according to Dr. Carl Pauli [1] common to people suffering from urino-genital affections. The Italian, according to Dr. Ricordi, becomes hypochondriac and desperate; and our lively neighbor, the Gaul, takes the affair still more to heart; for M. Robert tells us that he not unfrequently conceives a disgust for the world, goes mad, or decides that suicide is better than to be always taking copaiba, cubebs and alum, tar-water, and creosote, besides being made the subject of interesting experiments with the last new drug; the whole forming a rather sarcastic commentary on the many infallible methods of cure recommended for this complaint, and offering a suggestive hint to all but those who are insensible to ridicule, as is the case with the infallible section of mankind. Under these circumstances I hope to stand excused for devoting a little extra attention to the questions involved.

The following digest will, I think, comprise the pith of all the directions given by those authors I have consulted:—The specific remedies having failed, they may be tried combined or along with steel or cantharides; then the bougie, simple or armed, the latter being, when of any service, often intensely painful,[2] often failing, and almost invariably requiring to be repeated; violent exercise; a course of tonics, or one of Zittman's decoction is to be used, or the urethra may be cauterized; these failing, constitutional treatment is to be suggested, or change of air, sea-bathing, or the cold plunge bath, or perhaps an alterative course of mercury. Finally, we are told of cases where the *coup-de-grâce* has been given to the rebellious disease by some desperate remedy, such as the rude passing of a bougie,[3] an injection of brandy, a violent debauch, a drastic purgative,[4] a seton, or a blister to the perineum—so that the despairing reader has a method of getting out of the difficulty equally useless to himself and to the patient.

It is very safe to go into generalities, to offer simply collective experience, but it does not meet the difficulties of the subject. A surgeon, who

[1] Deutsche medizinische Wochenschrift, S. 64. 1875.

[2] Mr. Johnson, one of the advocates for the practice, candidly admits this.—Op. citat., p. 100. He also says that it is apt to induce inflammation of the testicle or bladder, and has seen bad stricture from it.

[3] Swediaur, Op. citat., p. 66.

[4] Hunter, Op. citat., p. 77.

has an obstinate gleet to cure, does not feel much wiser after reading over a list of remedies which would take two or three years to become thoroughly acquainted with.

Now, when a case of gonorrhœa or gleet has been regularly treated for thirty days, and at the end of that time is no better; when during all this time the surgeon has reason to think that the patient has given the treatment fair play, and finally, if there be no complication, such as swelled testicle or abscess in the perineum, my opinion is that it will not be cured by the ordinary remedies more than once in fifty times; nay, I question if any benefit result from employing them, and could we attain to a sufficiently accurate diagnosis at the outset, it would, I think, be better to resort at once to a different plan. But I know of no means of doing this—and the only rule I can find for using extraordinary measures is the failure of others.

Again and again have I in such cases, at the wish of the patient, or from a desire to avoid recurring to my last resource, tried one medicine after the other, and injections of all kinds. The result always was, either that the patient left uncured, that some complication sprung up, or that a cure—if effected at all—was wrought by some totally different means. I have long given up this plan, convinced that *if one medicine fail, a second has just as little chance.*

It may be said that this is a very short time to fix for a trial, but I can scarcely recall a case of cure being effected by medicine where there were no signs of amendment within a month. Delay, too, is perilous; while we are trying to cure the discharge, stricture, at the bottom of the mischief, may be gaining ground.

When a patient with long-standing gleet only comes under our care at an advanced stage, the first step of all is to make out the history of the treatment. Many of these cases last so long solely because no pains have been taken to secure a different result.

Thus, in one case the disorder had continued twelve months, but the patient had only taken pure copaiba and sweet spirit of nitre: a cure was effected in three weeks by the daily use of an injection of nitrate of silver. In a second, the gonorrhœa had lasted five months, but on cross-questioning the patient, he admitted having neglected it; it was cured in a few days by mild aperients and sulphate of zinc injections. In a third, the patient said he had had it off and on for eighteen months. His plan had been to go to a surgeon for three or four months, and if not relieved to betake himself to another; thus perpetually beginning treatment anew. He reaped the results in the form of a stricture. A fourth patient had been treated at intervals for twelve months by injections, and at the end of the time had not learned to give himself an injection properly.

This preliminary point being disposed of, I proceed to consider the treatment of the different varieties of gleet.

First Class.—Gonorrhœa of long Standing.—This form of gleet will generally yield to a mild aperient, as the infusion of rhubarb with soda, and an injection of sulphate of zinc two or three times a day. But if, at the end of ten to fifteen days, no improvement has been effected by these or any other means, the bougie may at once be passed; for every variety of discharge may be accompanied by more or less stricture, and the only sure proof of no contraction being present is that a bougie will pass. Should this exist, it is needless to say that it requires its special treatment. But if no stricture be found, my advice would be to have immediate recourse to the long syringe, and to carry the injection to the prostatic part of the urethra. Nor is any harm to be apprehended from allowing the injection to spread a little farther than the focus of mischief, the neighboring parts of the urethra being usually in a state which is rather benefited than otherwise by the nitrate; at least this has often been the case in my own practice. Thirty to forty minims are thrown into the canal. To the objection, which has been made, that even this quantity is excessive, that no object is served by letting a caustic solution flow over the anterior part of the passage, and that the same good would be gained by injecting six or seven drops at the bulb or prostate, I reply that I have never seen any mishap from this excess; that the inconvenience of having an apparatus, such as that required for injecting so small a quantity, and of measuring the spot in the urethra where this must go, is far greater than by my method; that caustic solutions should not be employed; and that no mischief ever follows from letting a weak solution flow out of the meatus. Half a grain to a grain of the nitrate, in an ounce of distilled water, is quite enough to begin with, and when the patient states that he is very sensitive to pain, even a weaker solution should be employed. But generally these patients bear injecting fairly well; the urethra has long ceased to be very susceptible of the action of such remedies, and, with a little caution, the strength of the fluid can be easily raised to five or ten grains to the ounce. Pain, however, to any great extent is a mistake.

Whichever form of syringe be adopted, I would suggest that two or three injections should be given with it in pretty rapid succession, and then that a period of rest, say for two or three weeks, be observed, during which the bougie may be passed every five or six days. I recommend the latter both because this instrument possesses some remedial power, and because the use of it removes the little clots of mucus which here and there cover a tender spot in the urethra. Unless this is done, injections may be given long enough without effecting much good. The force of the stream from the syringe does not appear great enough to displace the clots, and the solution merely flows over them, causing imperfect coagulation without touching the half abraded surface below. These clots will continue to form for years, and as there seems in some persons no natural disposition in the urethra to get rid of them, it becomes highly necessary to remove such an obstacle.

In close connection with this part of the subject it will perhaps be best to notice here some modes of treating gleet in which cold figures prominently; there is such a strong family likeness running through these systems that I prefer to take them altogether. The earliest recommendation to this effect known to myself is by a writer in the *Practitioner*,[1] Mr. Windsor's method being principally suggested for gonorrhœa, who says "we have frequently succeeded in curing chronic blennorrhœa, when many other means had been tried and failed, by directing the patient to wash out the urethra with cold spring water every hour throughout one or two days." A somewhat similar practice was advocated [2] by Mr. Reginald Harrison, the fluid being applied by means of an instrument similar to that which Mr. Windsor had described.[3] Other satisfactory accounts have been given, so that there seems no reason to doubt that a certain amount of success has been achieved in this way; but judging from the experience of Winternitz,[4] and from the effects ascribed to the use of bougies dipped in iced water, it would seem that the employment of a cold solid body is quite as useful.

There can be no harm in ordering a tonic, such as quinine or iron,[5] along with an aperient,[6] especially if the health happen to be out of sorts, as is extremely apt to be the case when the patient has been long trying to master the running by means of specifics. A patient who has suffered in this way is often reassured by such a step, and some persons like to give internal means a fair trial before resorting to instruments. They are often better, and never worse, for a proper use of such medicines, and a man in good health gets rid of gleet and stricture as quickly as if he were low and weak. Such remedies, then, may be advantageously prescribed for the purpose of relieving exhaustion and setting right disordered health; as regards any power over the discharge, they might as well be recommended in cancer or hydrophobia.

The Bougie.—But it may happen that we find some degree of stricture, and that we have to treat it before we can do anything for the gleet, so that it becomes necessary to discuss the best method of dealing with this complication. Prior to entering, however, upon this part of the subject, I must beg the reader to understand, that what I have to say does not apply to stricture generally, and particularly to bad, advanced, and complicated cases; but to that stage of it which we find as a cause or complication of inveterate gonorrhœa and gleet, which is seldom severe and might often be described rather as nascent than existing.

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[1] Vol. vii., p. 48. 1871. [2] Lancet, vol. i., p. 760. 1880. [3] Ibid., p. 901.

[4] Berliner klinische Wochenschrift, S. 401. 1877.

[5] ℞. Quiniæ sulphatis, gr. xij. (xxiv.); magnes. sulph., ʒ iv.; acidi sulph. diluti, ʒ j.; tinct. cardam. compos., ʒ iv.; aquæ cinnam. ad ℥ vj. M. Capiat cochlear. ampl. bis terve quotidie. ℞. Tinct. ferri sesquichlorid., ℥ j. Capiat minim. xxx. ter quotidie et aquæ cyatho vinar.

[6] ℞. Pilulæ aloes et myrrhæ, vel pilulæ rhei comp., ʒ j. Divide in pil. xij. Capiax j. vel ij. horâ decubiturâ.

After having tried, and seen tried, most of the systems in modern use, I feel myself compelled to say, that, as a rule, all such operations as sudden expansion of the stricture, or division of it internally or externally, are here almost always unnecessary, and only too often dangerous; *that they effect no purpose which cannot be gained more safely and painlessly by means of dilatation with the bougie to be presently mentioned, seconded by application of nitrate of silver*, and that at least nine times out of ten they are superfluous, inasmuch as the patient has ultimately, whatever operation be performed, to trust to gentle dilatation. I should be very sorry to offend any one by expressing this opinion; I am quite ready to bear ample testimony to the value of the inventions of Mr. Thomas Wakley and Mr. Barnard Holt, and to that of the operation devised by the late Mr. Syme, but I must adhere to the view I have expressed. The results, as detailed to me, of forcing stricture by means of the dilator in the posterior part of the urethra have been, in some unfortunate cases, severe pain, bleeding, abscesses in the perineum, pyæmia, followed in one case by affection of the hip-joint, the exact nature of which I could not learn, but which resulted in stiffness, apparently permanent, of the joint; more or less complete impotence has also followed. To dilatation of the stricture in the more anterior part of the canal I see less objection, and have myself frequently employed it.

I would therefore recommend, as a first step, that a proper bougie be chosen. I give the preference to the bougies made, under my directions, by Walters & Co., both on account of the shape, which is, to my thinking, better adapted for finding its way through a stricture than that in ordinary use, and of the material, which is so soft that no mischief can be done to the walls of the urethra, while it is so strong that the dangers attendant on the use of those mischievous implements, gutta-percha bougies, and the cheaper class of French instruments sent over to this country, are got rid of. As to first of all passing a wax bougie, a bougie-a-boule, or any other implement of the kind, I hold it, with all deference to the gentlemen who advocate the plan, to be totally unnecessary. A surgeon whose hand is properly trained—and no other ought in such a case to attempt to pass a bougie—can learn everything really requisite from using this instrument. I am aware that Dr. Dick, Mr. Teevan,[1] and other eminent surgeons who have paid great attention to gleet, recommend the use of the ball-staff, very much modified, however, from the form originally suggested by Sir Charles Bell, whose invention it was; but cogent as their argu-

[1] British Medical Journal, vol. i., p. 494. 1869.

ments may be, I must venture to abide by the position laid down, and I appeal to the results of experience in support of it.

Dr. Otis is an ardent advocate of the ball-staff. He prefers one with an olive-shaped end of metal, and a soft metal shaft, as this gives greater firmness than the flexible shaft of Le Roy d'Etiolles, and is easier withdrawn than a ball or acorn-shaped knob. The size of the bulb is determined by that of the urethral mouth, which it must fit accurately. The ball is pushed home to the bladder, and after being allowed to remain there two or three minutes, is slowly withdrawn; if a contraction, even not more than half a line in thickness, exist, its whereabouts will be indicated by a slight clinging or want of suppleness. He couples with this exposition of his views a recommendation, which certainly shows great faith on his part, and suggests equally great compliance on that of his patients. I give it in his own words. "Should this proceeding," he says, "fail in locating a stricture, I am accustomed to slit up the meatus freely, and repeat the operation with the largest bulb that will enter the spongy portion." A further modification of the bulb has been introduced, in which it is made almost triangular with the broad end attached.

My impression at one time was that in England not a single patient would allow a surgeon to use such a method, excellent as it might promise to be; I have had good reason to know that I was mistaken. The operation has been repeatedly performed in England, as far as I can make out with complete failure as regards the gleet. This, too, is Mr. Reginald Harrison's experience. "In several instances," he says,[1] "which have come under my notice, the performance of internal urethrotomy, as recommended by Dr. Otis, has entirely failed to remove the disease—namely the gleet for which it was undertaken.

The second step is, having made out the size, that the bougie should be *properly* passed twice a week. By properly, I mean that it should be gently and slowly passed quite into the bladder, and that it should never be suffered to remain in the urethra more than two or three minutes at the utmost; indeed forty or fifty seconds is generally enough. My experience has satisfied me that to pass a bougie too often, or to let it remain in the passage too long, is a mistake, and that instead of hastening the cure, it is very apt to retard it, by setting up so much irritation that instead of the stricture yielding more rapidly it becomes more contracted. Too much gentleness can never be exercised, and if I have learned one thing more than another from experience, it is that when the stricture is very tight, irritable, and resilient, gentleness will get through it more frequently and effectually than any brusque movement. The more sensitive, too, a patient is to pain, the more is this treatment adapted to his case. I have repeatedly, when the patient had suffered so much from the use of a metal-

[1] Lancet, vol. i., p. 760. 1880.

lic or even an ordinary gum-elastic bougie that he shrank from the very idea of an instrument, guided one of these softened bougies through without creating more than the most trifling uneasiness. The passing of the instrument is rendered less unpleasant by steeping it the first two or three times in hot water. Properly employed the bougie is of great service and I have much faith in it. I have not had the extraordinary success with it mentioned by M. Montanier,[1] who saw once passing a bougie cure a gleet which had lasted six years, but I believe it to be an excellent remedy.

I have repeatedly been asked, both by surgeons and patients, how a bougie acts in gleet, and therefore hasten to give the only explanation which suggests itself to me. I have watched the effects of the operation as closely as I could, and imagine that it acts much like a blister on a small scale ; that is to say, it excites an afflux of vital power toward a part already attracting an abnormal amount, and that, with the reattraction of the now mobilized vital power toward the seats of organic life, such withdrawal being occasioned by the daily wants of the frame, a rebound takes place, which lessens the accumulation of power at the morbid part. This view I put forward many years ago in the *Medical Times*, and, if it be not accepted, I have no other to offer.

Certain facts lend probability to it both as regards gleet and stricture, and I will therefore take the two together. Passing a bougie in either case will, at first, make the urethra more sensitive than it was immediately before, so that some change at any rate has happened in the state of the canal ; but if the employment of the instrument be kept up, even the previous sensitiveness is removed, so that a process somewhat of the nature that I have pointed out *must have taken place.* This is still more noticeable when an injection of the nitrate has been employed, as then the canal often swells so in a few minutes, that a bougie which would have gone through easily before the injection cannot be passed after it ; and a similar change takes place, but more slowly, after the solid nitrate has been applied. Both cause, in addition, heat and pain at the time, but afterward the canal is often healthier than before. Sometimes, too, a gonorrhœa will supervene upon a slight and recent stricture and aggravate it for the time, but with the decline of the running the contraction will sometimes also yield, and is afterward found slighter than before. Hunter's theory of a bougie setting up such an action of the animal powers as "either to adapt the parts to their new position or to recede by ulceration," [2] seems to me crude in respect to the first position, as though the idea had not been sufficiently worked out in his own mind ; and incorrect as regards the second, seeing that the parts do not recede by ulceration.

Nitrate of Silver.—Should, however, the progress of the cure not correspond to the wishes either of the surgeon or the patient, should the

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[1] Gazette des Hôpitaux, p. 286. 1869.

[2] Op. citat., p. 118.

discharge continue, and still more, should it be aggravated by the use of the instrument, I would suggest immediate recourse to the nitrate of silver, applied as described at page 220. When the patient prefers the nitrate to the bougie, and many do so, I would apply it regularly till the instrument slips, without any force being used, right through the stricture. When that occurs it is generally not necessary to do much more with either caustic or bougie. A few extra applications of either can do no harm, but they are seldom requisite. Practically the stricture is cured in so far as it admits of cure at all ; and, according to my experience, quite as effectually as if it had been expanded to the utmost limits.

To show how freely the nitrate may be applied, with impunity, by means of the instrument I have described, I may mention that, in cases where the patient was about to leave England I have used the caustic as often as six, eight, fourteen, or even nineteen days in almost unbroken succession, and though a good deal of suffering was often caused, no other ill effects ensued ; the patients were always able to attend to all that was necessary for their departure, and in some instances I know that they made fair and even good recoveries. Of many I, of course, heard no further, but no instance of any serious results has come under my notice, and that is more than I can say of speedy dilatation.

In one case I used it three or four times a week for upward of three months, with the best results. The patient had come from Jamaica, principally to be treated for his complaint. The written account which he brought from the surgeon who recommended him to put himself under my care, and who shortly after followed him to England, was that he had three strictures ; the most anterior one only allowing a number four to pass, while the finest size alone could be got through the second, and none through the third ; and that had he been between twelve and thirteen years under the care of this gentleman. The patient was in rather broken health, and had on each knee and the left elbow a mass of gouty deposit, somewhat like a large limpet in shape, formed of thickish flakes, scattered irregularly through the subcutaneous and dermoid tissues. The nitrate was after a time or two applied most vigorously, the strictures, the two latter being apparently one continuous narrowing, yielded rapidly, and in the presence of the surgeon, who was extremely gratified with the result, and would, I feel sure, confirm all I say, at the conclusion of the treatment I passed a full-sized bougie into the bladder.

Potassa fusa.—The late Mr. T. Carr Jackson employed caustic for stricture in a manner which, though more suited to the cases I have spoken of as beyond my province, proved so very successful that I go out of my way to notice it, as it might be a valuable resource here. He used the potassa fusa, and applied it by means of a silver caustic-holder, shaped like a catheter and of number seven gauge. The tip, which screws off and on, is hollowed, and pierced with a hole just large enough to let a bristle pass

through. The caustic is laid in the hollow of the tip, and when this is screwed on, the point of the stem on which it is screwed holds the potass against the hole in the tip. The instrument, oiled, is passed down the urethra till the point reaches the contraction, and then the salt, melting, flows out through the hole and acts on the stricture. The holder is armed with a piece of potass about the size of a number six shot. Mr. Jackson used this instrument very successfully in many bad cases, and especially in one of traumatic stricture, where it was impossible to get even the smallest catgut through, the urine passing only by drops ; and where, after seven applications, the potass, even under these unfavorable circumstances, effected such a steady relaxation that a number two catheter could be introduced, and in three weeks more a number ten.

Blistering.—It will now be necessary to take up again the treatment of this class of cases when not complicated by stricture, and in these I would advise that, if injections do not within a very short time produce a distinct lessening of the discharge, the penis should be blistered without delay, and whatever form of counter-irritant the surgeon may choose, observation will quickly show him that there should be complete vesication. So soon as the soreness has passed off, mild injections can be employed. Should the action of the blister not correspond to the expectations entertained, the use of the bougie, and touching the posterior part of the urethra *gently* with the nitrate of silver, will now, assisted by a mild aperient and tonic, generally effect a cure. But if the exigencies of the case seem to demand it, I never hesitate to blister again and again till I have gained the point in view. To the objection that others have not succeeded so well with blistering in gleet, I must with all deference reply that this is because it has not been properly employed and properly seconded. In many cases it must be thoroughly done or it had better be left undone, and it should be effectually supplemented by the use of the bougie or nitrate, or both. Resorted to in this way in earnest, it will rarely fail to render most timely, often invaluable, assistance ; the testimony of many surgeons who have employed it at my recommendation is quite to this effect, and from all theoretical objections I appeal confidently to the fruits of treatment. A blister is one of the most powerful remedies that can be employed in any case that is not complicated with stricture. So far as my experience goes, it is, when properly used, the most efficacious remedy we possess in many cases, and the best calculated to remove that painful susceptible state of the urethra, often remaining after gonorrhœa treated in the usual way, the tendency to catch fresh infection, and the defective expulsion of urine and dribbling after making water, which lead so many patients to think they have stricture. As to the discomforts of blistering, I consider them as nothing in comparison with those caused by gleet. If patients complain of such trifling drawbacks, it only shows how inconsistent and ungrateful man is. They must, then, really expect to be cured of these

disorders without any sacrifice of trouble or convenience. If they had lived a century ago, they would have been only too glad to avail themselves of such a remedy. Among the advantages, too, of blistering is the fact that it generally arrests, or cures effectually, that unsatisfactory state known as irritable urethra. Properly aided by some tonic suited to the patient's digestion, and mild aperients, it will remove irritability more rapidly than any remedy I have seen tried or ever heard of.

During the time, however, that the method is being put in force the patient requires no particular internal treatment; it is as well to keep the bowels open, and sometimes a sharp dose of calomel followed by a black draught acts beneficially. Now and then it will happen that a patient, who is being treated in this way, has to endure the mortification of finding the discharge reappear at the very moment he thought all gone. Thus on the third day there may be no running, and on the fourth there is a good deal; but it generally subsides as rapidly as it appeared if the patient will only abstain from tampering with it.

How does this remedy act? By counter-irritation, will perhaps be the answer. But, if this were the case, why should there be increased action in the urethra for a few days, and why should the discharge from the urethra begin to disappear when the counter-irritant surface is healing up? I lean to the belief that the action is purely reflex, and that the explanation suggested in the *Laws of Life* is the one which will hold its ground.

Should symptoms point to the posterior part of the urethra as the seat of the discharge, I would recommend that the perineum should be blistered. A very good way of doing this is to apply Bullin's blistering fluid by means of a camel's-hair pencil. It should be laid on with a rather dry brush, so that none of the fluid trickles down and excoriates the thighs or scrotum, and a space the size of the palm of the hand should be painted over with it. This process soon raises a blister, which is to be dressed like the others, but, of course, only a T bandage can be used. This may be made by attaching a handkerchief to the back of the belt of a suspensory bandage (or another handkerchief tied round the waist), bringing it up between the thighs, and fastening it to the belt in front. A pad, shaped as much as possible like the roof of a small toyhouse, is fastened with the ridge upward to the part next the blistered surface, and on this is laid the lint or linen with the ointment, which it serves to retain in its place. Friction of one blistered surface against another, the great source of discomfort, is thus prevented. The patient, unless of an inventive turn of mind, is apt to fail with his first essay, but he soon learns to dress a blister deftly enough. A bandage adapted to this purpose, with a triangular moc-main pad and elastic belts, is made for my patients by Walters & Co. It answers well and keeps the part comfortable.

Men suffering from gleet in any form are very often habitually guilty of one piece of imprudence. In order to see how the complaint is going

on, they squeeze the penis to force out any pus. They should be strictly warned not to do this. I have many times had reason to believe that this habit had been instrumental in keeping alive the discharge, because so soon as they had desisted this had somewhat diminished. The proper plan for ascertaining whether the secretion of pus is lessening or not is to make water into a glass vessel—an old tumbler for instance, and examine the amount of shreds in the urine.

Diet in Gleet.—Patients continually ask what kind of diet is best suited to the case, and especially in reference to the form now under notice. I believe the answer to be, simply, that a plain, light but good diet will meet all requirements; that in every form of disorder known, or supposed, to be influenced by the food, it is safer to avoid over-free use of ascescent articles, and those which are hard to digest, such as pickles, pork, and shellfish; and that the best kind of drink is some light red wine. The late Mr. Skey was very fond of recommending beer in this stage of the complaint. I can only say that, while I never saw malt-liquor in any shape do the least good, I have met with many cases where it certainly seemed to do harm; and it is rather a puzzle to me why, if it possesses any curative property, it does not cure some of the many persons who take it daily while suffering from gleet. I apprehend, however, that most of those who inquire thoroughly into the question will fail to find any virtue in beer; neither indeed will they in red wine so far as visible curative action is concerned; but the latter possesses the great advantage that it never does harm, while weak, anæmic people frequently grow strong and make blood on it. With respect to the kind to be recommended, a question the patient is almost sure to put, I may answer that I have tried the vintages of France, Spain, Sicily, Greece, and Hungary, without being able to detect any particular superiority in one over the other; and after years of observation have only been able to conclude, that any sound unbrandied wine of the claret or burgundy class will serve the purpose.

Complications of Gleet.—I have now to draw upon others for rules of treatment respecting one or two complications, which may as well be looked into here, inasmuch as they apply equally whatever form of gleet they may appear with. These are—1. *A granular condition of the urethra* with or without ulceration, of which I have no sort of knowledge, having never seen reason to believe that I had such a state of matters before me. 2. *Abnormal sensitiveness of the urethra*, described by Dr. Otis, and seemingly a more persistent form of the symptom already spoken of as irritable urethra, and for the cure of which he passes a stream of carbonic acid through the channel by means of a flexible catheter. 3. The *sinuses* mentioned by the same author, which he treats by incision. For instance, in the case already described, where the two openings were outlets of this nature, he slit them up so as to lay the two into one, cauterized the ulcer (!) in the floor of the fossa navicularis, and in twenty days the wound was

cicatrized and the discharge had ceased. There was also a contraction of the urethra, close to the ulcer, which he slit up. 4. The *follicular gleet* spoken of by M. Diday, which he treats with the actual cautery, wriggling a knitting needle to the bottom of the little pouch, and then heating the needle.

Along with these may be taken the cases of gleet depending upon *engagement of the lacuna magna*, for which also incision has been recommended. Dr. Otis says that Dr. Benjamin Phillips, in his treatise on "Diseases of the Urethra," relates four cases of this complication, in which he performed the operation with success. I have sought in vain for this work, of which Dr. Otis does not give the date, or the pages at which the histories of the cases are to be found, and Dr. Bumstead's search for it was equally unsuccessful.[1] I was under the impression that these must be the cases referred to by him,[2] but he kindly pointed out to me that he quoted from Dr. Charles Phillips, of Paris, who states that he cured four cases of obstinate gleet by introducing a director along the urethra, and then slitting up the wall of the follicle with a narrow bistoury. There is a well-known book by Mr. Benjamin Phillips, formerly surgeon to Westminster Hospital, but the title of it is "On the Urethra," and the only copy of it in the Library of the College of Surgeons does not, I believe, contain any mention of such treatment.

Second Class—Inveterate Gonorrhœa.—In every case of this kind, whatever may have been the previous duration of the disease, I can see no objection to its being treated at once as acute gonorrhœa, and perhaps a small number of these cases may be cured—certainly many of them are somewhat relieved. Here also, if at the end of thirty days no improvement be effected, the disease will in most cases not be subdued by any amount of perseverance in the use of such remedies; accordingly at the end of this time I at once blister the penis and order a smart purgative, treating the case subsequently as in the preceding class. When the surgeon has removed a discharge of this kind, I would strongly advise continuing the use of the bougie, as recommended at page 283, once or twice a week, for some little time after. The urethra is not always restored to a healthy state with the cessation of the discharge. During all this time a tonic and aperient ought to be given.

Dr. Abrath, medical officer to the hospital for foreign seamen at Sunderland, communicated to the *Medical Times and Gazette*,[3] the history of five cases which I think belong to this category. The disease had lasted from fourteen months to two years, and had defied all remedies. He treated the patients most successfully by means of ice, introduced down

[1] Bumstead and Taylor: The Pathology and Treatment of Venereal Diseases, p. 82. 1879.

[2] Ibid., pp. 90 and 98. 1861.

[3] Vol. i., p. 385. 1870.

the urethra night and morning, the channel being previously washed out. Also eight cases of leucorrhœa, accompanied by erosion of the cervix uteri, ulceration of the cervix, etc., cured with the same means in from four to six weeks.

Third Class—Muco-purulent Gleet.—Here the bougie may at once be passed, however confidently the patient may assert that the opening never was any larger, and that he makes water as well as ever he did. In all these cases I have found stricture, with one exception, in which the patient had a small fistulous opening behind the frænum, and so habitually placed his finger there to stop the urine that he never thought of telling me. In this variety I have sometimes succeeded in arresting the discharge, and the patient has come back months after with stricture, so that I now always resort to the bougie without delay. If there be much muco-purulent discharge, a mild injection may also be used; but where there is only sufficient to glue the lips of the urethra together, the necessary relief will frequently be derived from injections of pure water. In many of these patients the health is a little out of order, principally, I think, from their having taken so much medicine. Small doses of quinine, a mild aperient pill once or twice a week, and, when there is pain in making water, an ointment containing twenty grains of Morson's veratrine to an ounce of lard, rubbed below the urethra, will generally effect a good cure.

Fourth Class—Prostatic Gleet.—Obvious as the similitude is between the two subdivisions of this variety, there is a marked difference as to the effects of treatment; for while the simple form is usually got rid of with little trouble, and seldom, if ever, shows any disposition to take on the character of urethral inflammation; that from contagion is often, even when very slight, intensely obstinate, and is liable, although no discharge may be habitually present, to assume, under the operations of very slight excitement, all the characteristics of gonorrhœa. I give two cases illustrating the persistency of this form. Properly speaking, they belong perhaps rather to the section on prognosis, but the recital of them would have encumbered that part of the work too much. These cases will also exemplify the difficulties which sometimes beset the only treatment likely to be of service; namely, injections, nitrate of silver, and free dilatation.

T. S——, Esq., a healthy man, who had lived long abroad, consulted me respecting a gleet of this kind which he had had quite twenty years; indeed he added that, if he put down the time at five-and-twenty he should be nearer the mark; but as to the twenty years he was certain, because he had, for quite that time, been out of England, and he had contracted the disorder before he went abroad. There was usually very little discharge, often nothing more than a few shreds passed within the urine, there being at such times no secretion visible at the mouth of the urethra, and no stains on the linen. Connection, however, especially if he had been hunting much, of which he was extremely fond, often developed it rapidly. He

said there was a gouty history in the family, but that he had not suffered from the complaint. The idea, that the disposition of the gleet to relapse so continually was due to latent gout, had taken possession of his mind, and certainly it did seem anomalous that a man of healthy build and healthy habits, for such he described his to be, should suffer so long. His complaint had followed a gonorrhœa, cured by means of copaiba and injections of acetate of lead combined with sulphate of zinc. The gonorrhœa apparently got quite well, but in the long interval between its disappearance and his consulting me, he had suffered almost innumerable relapses after connection with perfectly healthy women.

He came occasionally to see me for eleven months. Injections were given, but not often; the gum bougie was passed now and then. Once gout appeared, but in a very mild form. I prescribed colchicum for it, but the patient had a horror of this drug, and lithia was substituted. The shreds in the urine did not lessen under this treatment. At the end of the eleven months, he all at once made his appearance with a running which looked like veritable gonorrhœa; it had come on, he said, very shortly after intercourse with a woman whom he knew very well, and who, he was assured, had no disease.

After connection, he drank two glasses of hollands and water, and followed this up with some hard hunting. He returned to town with a profuse discharge.

A mild injection of nitrate of silver was given. This was done about half-past one in the afternoon. The next day the patient reported that, by five P.M. the discharge had become watery, and so plentiful that he fancied he must have burst some internal organ. It did not drip, he said, it ran from him, and, as it subsided, gave place to a dirty green, thick, somewhat abundant discharge, accompanied by redness of the glans; these he told me were the symptoms he usually had in his relapses. Hot bathing, preparations of potass, aperients and low diet steadily subdued these symptoms, but they receded very slowly. He was a good deal plagued with erections, but lupulin and camphor removed this symptom. The oil of sandal-wood was now tried, and at first he thought it did him good. Then, an injection with the long syringe having cleared the way, the nitrate was applied twice to the urethra; once by means of the short stylet and sheath to the front half, the second time with the long instrument to the posterior half of the canal. This brought on a great deal of discharge, some slight bleeding, and considerable irritation in the urethra, after which decided improvement set in. I now proposed blistering, to be followed by thorough dilatation, with a view to sweeping away the last dregs of the disease, but the patient left London, and I believe England, quite suddenly, and I did not see him again.

I had under my care a case of this class, complicated by congenital tightness of the mouth of the urethra (which also opened about four lines

behind and below the natural site), number eight bougie only passing with difficulty. The patient, a surgeon, said he had done everything for the gleet that he could think of, but without avail, the disease having lasted nearly thirteen years. The application, however, of the solid nitrate, by means of a sheath and stylet not larger than a number seven catheter, soon produced a favorable change, and I was flattering myself with the hopes of a complete recovery, when the patient was suddenly called to a distance and kept there. He afterward wrote, saying that he was in much the same state as when he left, and I may add that he told me, while having the nitrate applied, that it was the only thing which ever really "touched" the disease.

Fifth Class—Pure Mucous Gleet.—This variety need not detain us. But for the anxiety it causes the patient, I should say the best treatment was to let it alone. I have tried various astringent injections, among others that of green tea, without much result. M. Montanier says [1] he has never seen it cured by anything, but what is sure to die out of itself does not need curing. Occasionally the resins, such as Chian turpentine, in doses of ten grains, or the inspissated essence of spruce fir or pine, in the same dose, twice a day, are of some avail whenever the bladder is involved.

For *Gleet of Cowper's Ducts*, Dr. Ricordi tries the solid nitrate of silver, and this failing, destroys, or at least cuts through, the submucous part of their outlets. For this purpose he uses a canula with a stylet. The canula is solid at the tip, which is shaped much like that of a catheter. About a centimetre and a half from the extremity of the tip, there is a horizontal slit traversing four-fifths of the periphery, and through this slit, a very small scimetar-shaped blade is made to protrude to the extent of three millimetres, by turning the mandril. This blade in its course describes an arc of a circle, and is rendered immovable by the pressure of a screw, so that there is no danger of its protruding when the instrument is moved about in the canal. With this he cuts the floor of the urethra transversely in three or four places, about a centimetre apart, and to the depth of two millimetres, the first incision being a centimetre and a half *anterior to the bulb* and the others *in front of it*. A gum catheter must be kept in the urethra for twenty-four to thirty-six hours after. The treatment seems to have been successful in two cases, one of them rebellious to previous methods, and probably in a third, where, however, the later result was not ascertained.

As to the treatment of gleet by insufflation, as recommended by M. Mallez,[2] and later by Mr. Wilders;[3] that of chronic prostatic gleet by touching the prostatic portion of the urethra with dilute solution of the

[1] Op. citat., p. 278.

[2] Union Médicale, nouvelle série, tome xxx., p. 126.

[3] Lancet, vol. i., p. 802. 1873.

perchloride of iron; of the method practised by Dr. Clemens,[1] who uses what might be described as a guttered bougie, the depressions holding salves charged with tannin, ergotin, etc., and kept in an ice-safe till wanted, and indeed as to all the remedies not specifically recommended, I have no experience to offer. Insufflation appears to have succeeded in the hands of both the gentlemen spoken of, M. Mallez having cured some cases of long standing. The instrument which he employs was exhibited by M. Ricord at a meeting of the Imperial Academy of Medicine, and looks highly ingenious. The judicious use of perchloride of iron is most probably quite safe; over-free employment of it brought on death in a case related by M. Venot.[2]

M. Charles Phillips speaks[3] of defective erections and premature emissions as common results of gleet; but I have never noticed a single fact which lent any countenance to such an opinion. There is a gap between the cause and effect. M. Phillips should have said that gonorrhœa is followed by gleet, and brings on nocturnal emissions or aggravates them when present, a state always succeeded in time by the symptoms he mentions. The one great mischief to be dreaded from gleet is stricture, with its concomitant evils.

In my opinion the patient should never be pronounced cured of gleet, till the urethra has been some little time in a healthy state, and till a bougie will pass without causing any particular uneasiness, or bringing on any return of the discharges. It is not always easy or pleasant to answer the patient's questions on this head, but so long as there is any unusual sensitiveness of the urethra, any abnormal redness of the mucous membrane, or any increase in the natural secretion of mucus or whitening of it, he is not safe. The merest speck of discharge may, after years of quiescence, ripen into mischief or convey infection, and I quite concur in the censure which Mr. Lee passes upon Hunter's dangerous doctrine about gleet being innocuous; a doctrine upheld again not very long since, by M. Charles Dufour,[4] as also practically by Noeggerath and those who sanction his views.

B. *In the Female.*—On this head it will not be necessary to say much, seeing that for the most part only a persevering use of very simple means is required. When the patient is out of health and the appetite is bad, dilute nitro-hydrochloric or sulphuric acid should be given in some bitter or aromatic infusion such as calumba or snakeroot, to be followed by quinine or steel. The stringy plug of mucus (page 145), if present, should be removed, and the vagina cauterized twice a week. I have never yet found

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[1] Deutsche Klinik, S. 186. 1873.

[2] Union Médicale, tome xi., p. 5. 1857.

[3] Traité des Maladies des Voies Urinaire, p. 32. 1860.

[4] Union Médicale, nouvelle série, tome xi., p. 287.

it necessary to apply the nitrate to the female urethra. Unless the discharge begins to abate within a fortnight, I always recommend that the groin be blistered; and as well as I can make out, these means suffice quite as effectually for the removal of disease in any uncomplicated case as the most elaborate system. The patient should keep to the diet laid down for the male, take as little exercise as possible, and abstain sedulously from connection. In her case, too, the cure should never be pronounced complete till she has been free from discharge quite a month.

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~~JAN 30 1939~~			
~~OCT 9 1939~~