On the pathology and treatment of gonorrhoea and spermatorrhoea / by J.L. Milton.

ON THE

PATHOLOGY AND TREATMENT

OF

GONORRHŒA

AND

SPERMATORRHŒA

BY

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NEW YORK
WILLIAM WOOD & COMPANY
56 & 58 Lafayette Place
1887

PREFACE TO GONORRHŒA.

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 specific, 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.

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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

[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

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[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

[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-

[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 such 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.

[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 tragacanth, 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,"

[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]

[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

[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

[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-

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[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. hor. 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.*

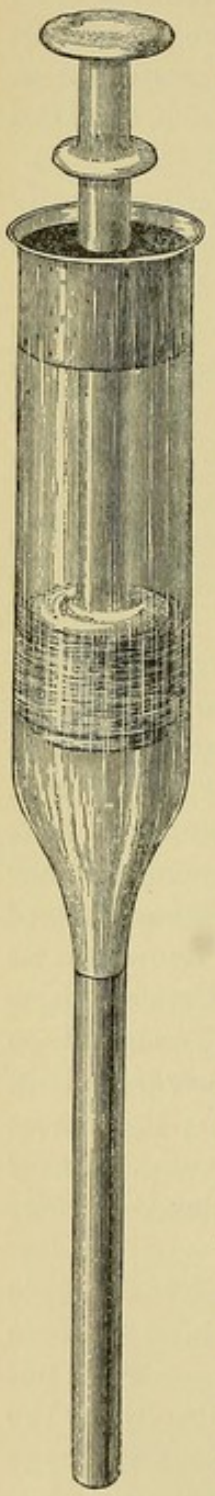
When this injection has, from some idiosyncrasy, produced a greater amount of pain than was expected; when the patient has been using too strong injections previous to his first visit; when there is reason to suspect that stricture is coming on; when there is an aphthous state of the urethra, or discharge 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.

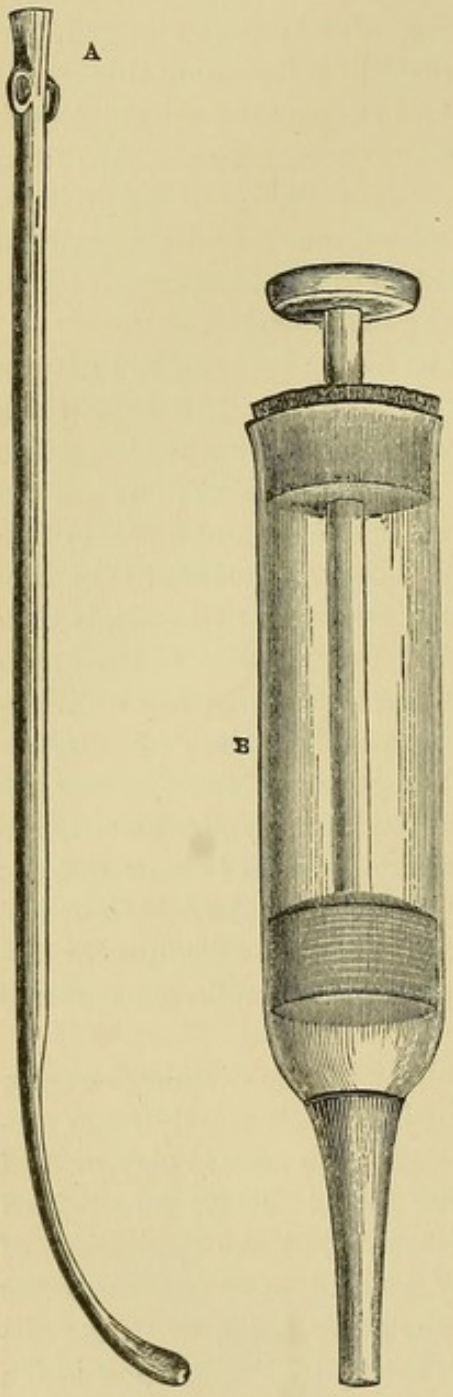
The nitrate of silver injection is used regularly till the discharge ceases, and for three days after. From that time forth it is given only every second day, and can even usually be reduced in strength; for it may be laid down as an axiom, that the necessary effect should always be attained with the 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

[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.

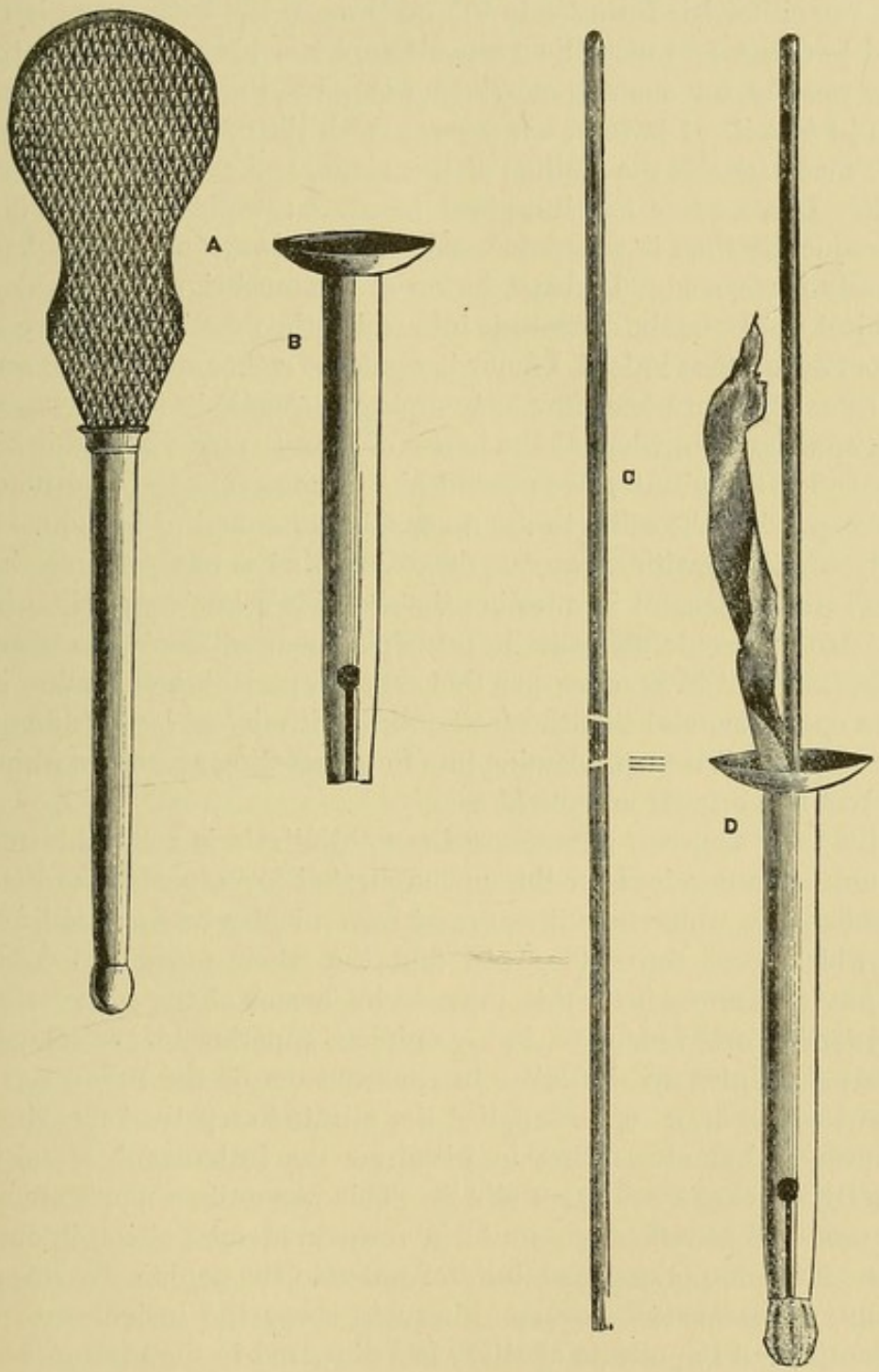
applied. The advantages of this mode of construction are that regurgitation is obviated by the shoulder of the bulb, that the smallness of the holes prevents too much fluid being thrown in at one time, and that the bulb serves instead of a ball-staff to explore the urethra.

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

[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

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

[2] Séméiotique 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. 337.
[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

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[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

[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	...					
Feb. 14 ...	9	3	...	1	10	46·4	33·3	N. and S., S.E.	0·22
	10	2	1	...					
	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					
May 29 ...	24	...	1	1	8	58·7	46·3	N.	0·87
	25	...	1	1					
	28	2	...	...					
	29	2	...	...					
June 5 ..	31	1	...	...	5	63·7	43·4	S.W. and S.	0·20
	1	2	...	...					
	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	...	...					
	29	2	...	...					
Jan. 1 ...	30	1	...	...	8	51·7	41·8	S.W.	0·43
	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.
	28	...	3	...					
	29	1	2	...					
April 2 ...	30	1	...	...	13	53·5	34·3	Variable	0·44
	31	...	1	1					
	1	...	1	...					
	2	2	1	...					
	4	1	2	...					
	5	...	1	...					
April 9 ...	6	...	1	...	9	55·9	43·3	W.	0·44
	7	2	1	...					
	9	...	1	...					
	11	3	3	...					
	12	...	1	...					
April 16...	13	...	...	...	11	52·9	38·0	N.E. and N.W.	0·02
	14	1	2	...					
	16	...	1	...					
	18	4	1	...					
	19	...	1	...		(1)			
April 23...	20	1	...	...	11	54·5	41·3	Variable	0·90
	21	2	...	...					
	23	2	...	...					
	25	1	...	...		(2)			
	27	...	...	1					
April 30...	28	1	...	...	4	51·7	36·0	Variable	1·32
	29	1	...	...					
	2	1	...	1					
	4	...	1	1					
May 7 ...	5	4	...	...	9	57·2	41·4	E., S.E., and N.E.	0·84
	6	...	...	1					
	9	2	...	...					
	11	...	1	1					
May 14 ...	12	1	1	...	8	56·0	37·1	Variable	0·37
	13	...	1	...					
	14	...	1	...					
	16	3	...	...					
May 21 ...	19	1	2	...	8	67·1	43·8	N.E.	0·00
	20	2	...	...					
	23	1	1	...					
	24	1	1	...					
May 28 ...	25	...	...	2	9	72·6	46·4	N.E.	0·13
	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	2	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.	0·60
	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	...		(2)			
	11	1	...	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[2] 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 cret., 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

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[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.

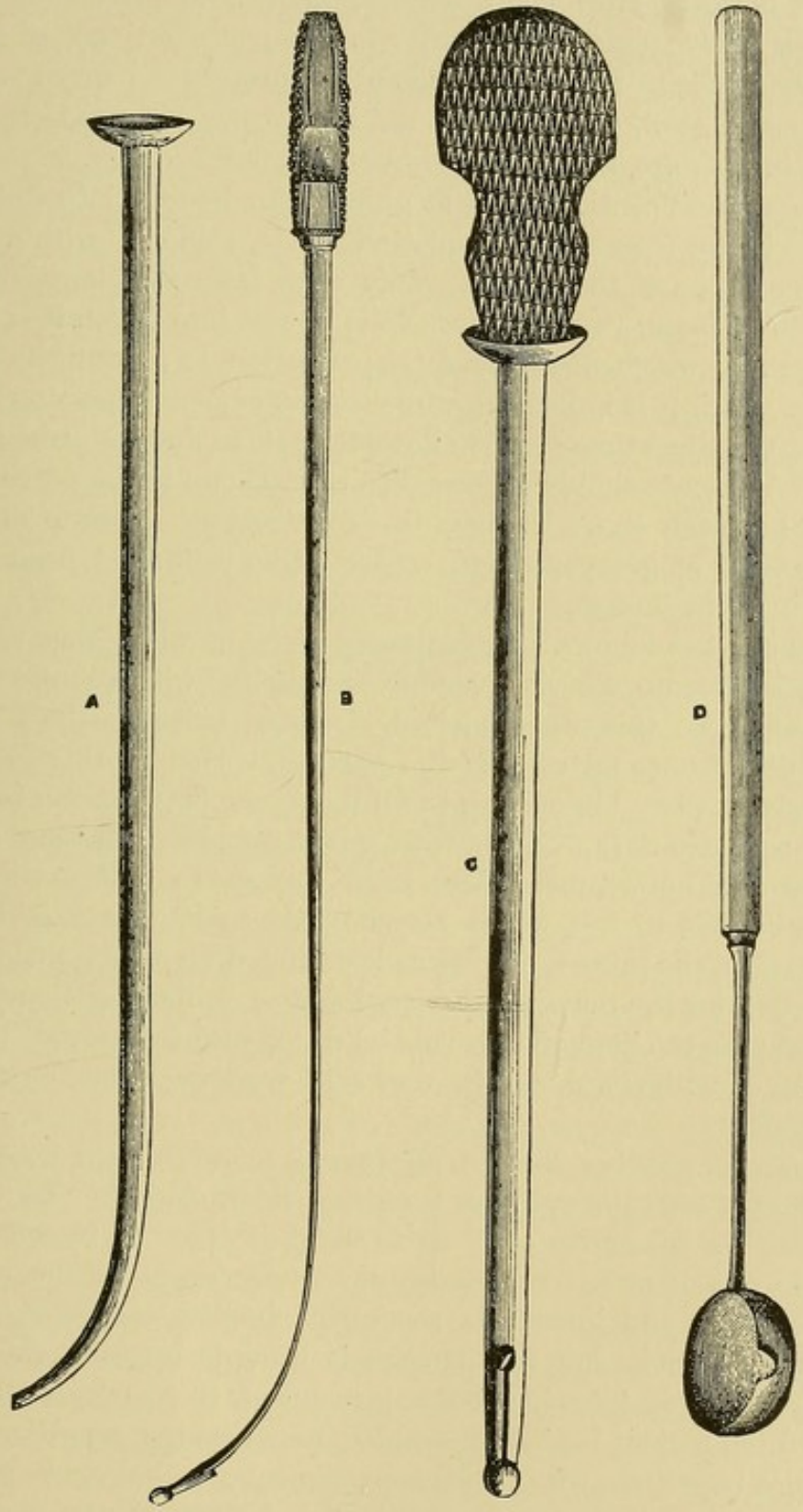
On my return from London the employment of the bougie was commenced, and with this began the first real improvement in the case. The stricture yielded slowly but steadily, and directly this change showed itself the discharge lessened. At first there was always some slight bleeding after even the most 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,

[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, accompani d 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

[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 102⅔° (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

[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 Pyœmia.*—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

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[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

[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., ℥ 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

[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 shell-fish; 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.

PATHOLOGY AND TREATMENT

OF

SPERMATORRHŒA.

PREFACE TO SPERMATORRHŒA.

EVERY effort has been made to render this edition as complete as the nature of the subject admitted. I am not aware that any attainable sources of information have been neglected. It is, however, only right to say that, although numerous references have been made to the writings of others, the bulk of the work is, after all, essentially clinical, the fruit of observation rather than of reading.

I have been told that the description I had given of the effects produced by the disease was overdrawn. My answer is very simple. I have taken my account from the statements made by patients, not from the opinions of compilers. I have spoken of symptoms and results as I found them, and as any one may find them who chooses to seek for them. Whether a description from Nature agrees or not with the doctrines taught in schools, and laid down in text-books, is a matter which does not concern me and upon which I accordingly forbear to enter.

It has been said that spermatorrhœa is a mere symptom, a result of morbid imagination, which ought not to be ranked as a disease. With all deference I submit that the arguments in favor of spermatorrhœa being a disease are unanswerable. Even were it merely a symptom I should consider that it merits all the attention my readers can give it. One of the best practitioners of modern days, Sir Benjamin Brodie, tells us that the discrepancies between the systems of pathologists and the experience of surgeons would be avoided, "if writers would sometimes condescend to treat of symptoms rather than diseases;" and he is only one of many who, in the evening of life, warned by the errors and misery they have seen result from a blind adherence to systems and fashions, have arrived at the conviction that symptoms, which are eternal in their nature and as indestructible as the qualities of matter, belong to those little things which, after all, chiefly make up the great business of life, and which are

of far more moment than any theory or system—things of sand, heaped up by one flood only to be scattered by another.

When I began these investigations little had been done towards settling and completing the treatment of this affection. Hunter's limited experience was rather entertaining as a narrative than useful as a guide, and the subject had been little more than opened up in Mr. Curling's excellent work. Indeed, practically speaking, the only rule of treatment was the unsparing use of the nitrate, as supposed to be taught by Lallemand, though he really used it in moderation and had much less faith in it than his imitators. Now a code of rules has been drawn up, intended at any rate to meet, not only the usual run of cases, but those relapses and complications which, whatever may be said to the contrary, often prove very embarrassing in practice.

I have to express the great obligation I am under to Dr. Skinner, for the care with which he has revised the sheets.

ON SPERMATORRHŒA.

CHAPTER I.

HISTORY.

By this I mean the collecting and gathering together into one focus a few fragmentary and scattered observations relating to the subject; for history, properly speaking, it has none. That of gonorrhœa and syphilis is obscure enough; but compared with the darkness which rests on spermatorrhœa it is light itself. Most likely the complaint began to affect men as soon as they first commenced abandoning the rude life of the hunter and shepherd for that of citizens,—when they began, for the sake of safety and greater ease of living, to sleep in the low-browed, pent-up rooms of the closely-built, little fortified cities and towns of the olden times; for such is its nature. It seems beyond all doubt that Moses legislated for those affected with it; and at one time, judging from a passage in the translation of Plutarch by the Langhornes, I felt inclined to adopt their reading, and to believe that the great Alcides himself was reputed to have undergone purification on account of having suffered from this disorder. Considering the freedom with which Horace, to whom the doors of the best society in Rome stood open, handles[1] the subject, there would be nothing unusual in an allusion to it by a Greek author of later date, pretty extensively if not accurately acquainted with Roman literature; and certainly the words used by the translators are scarcely applicable to anything else. "Hercules," they say,[2] "was initiated into the mysteries of Ceres, having first obtained lustration, as he desired, on account of several involuntary pollutions." But on going through the original, I am disposed to conclude that the translation is misleading, that the rendering should be "senseless acts," and that perhaps Plutarch had in view the deeds of violence attributed to Hercules. I need scarcely point out that it matters little here whether Hercules ever existed or not, the question being really whether the affection was known and spoken of

[1] Sanitarum, lib. 1, 5 l. 84.

[2] Plutarch's Lives; 1821, vol. i. Theseus, p. 90.

in Plutarch's time, which, even after rejection of the foregoing passage as evidence, was, I should think, reasoning from collateral testimony, certainly the case.

Spermatorrhœa, as an integral part of tabes dorsalis, was described and treated, either by Hippocrates himself, or by some one who lived near his day; for be the work "about diseases" (περι νουσων) genuine or spurious as regards its authorship by the father of medicine, it was clearly written by an experienced physician, and not long after the time of Hippocrates. The author not only describes[1] spermatorrhœa, but discharges from the seminal vesicles; he believed that both took their origin from an affection of the spinal marrow, and led up to an incurable form of consumption, a piece of pathology which has been handed down in unbroken descent almost to our day. Celsus again treats of spermatorrhœa,[2] but only in a very advanced and pretty well hopeless state; if, indeed, in what he says, he described a discharge of semen, and not, as was almost certainly the case, in some instances at any rate, either cystorrhœa, prostatitis or gleet of the seminal vesicles. With this great observer ends, so far as the present subject is concerned, all attempt to study disease. He was followed by a race of men who for ages seem to have made no effort to employ the senses which Heaven had given them, to use their own eyes and examine for themselves. In a simplicity of faith calculated to awaken something like a feeling of contrition in the breasts of the present generation, they were quite content to take their pathology on trust, and to copy from those who had copied before them. One after another, in long and dreary succession, they pass before our eyes, repeating the same ideas, usually in much the same language; thus simply adding to the bulk of the confusion in which till quite lately the whole subject was involved. It would serve no useful purpose to parade the names and opinions of those who, during the next ten or eleven centuries, treated of the disease, almost always in a most confused and imperfect way; no one of them merits any particular attention, much less the confidence of the reader. Indeed many persons will say that the best plan would be to leave them alone, that "night and the fabled manes" are on their haunches and will take good care of them. Unfortunately this excellent advice is not to be trusted; some very recent histories of venereal affections show that it is not safe merely to ignore old authors and old traditions. I therefore consider it necessary to add, that the picture drawn by Hippocrates and Celsus, in which vesicular and prostatic gleet are mixed up with seminal emissions and their results, gradually become more and more obscured; and that after gonorrhœa appeared upon the scene matters got into a state of perfect chaos, six different affections being so mingled together,

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[1] Magn. Hipp., op. omnia. Edit. Car. C. G. Kühn; tom. ii. p. 265.

[2] De Medicinâ, lib. iv. c. 21.

that it is only with the greatest difficulty we can make out which of them or which complication of them some particular author is speaking about, while sometimes the task is a sheer impossibility.

Even those medical writers who flourished towards the close of the fifteenth and early part of the sixteenth century, who studied syphilis with such care and diligence as to have bequeathed to their successors a large amount of valuable information, and understood it better in some respects than such men as Sydenham and Hunter, never seemed to have grasped the nature of this complaint; I have not been able to find that one of them gives a satisfactory account of the affection. There is evidence enough to show that it continued to exist, sometimes even in a very severe form, and that the pathology of it was not improving. During the interval which elapsed between this epoch and that of Hunter, much was done towards improving the knowledge of syphilis; and the treatment of gonorrhœa, though still rude and incomplete enough in some respects, had, in point of efficacy, advanced nearer to the standard of the present day than might be thought; but as regards spermatorrhœa things went on as badly as ever, no progress was made in the elucidation of its nature, and the subject became constantly more entangled in an ever-growing mesh of crudities and repetitions. Indeed, were the authors even of last century judged purely by what they have written about this disease, a most erroneous opinion would be formed of men justly eminent in other branches of study. The total want constantly displayed here of any analytic power of mind, of the smallest capacity for discriminating symptoms, of that perspicacity which should have led them to examine the dead body and learn from it whether there was any foundation for the pathology which they taught, impress the reader most unfavorably. Some of their productions are scarcely those of rational beings; the subject seems to have benumbed their faculties. Wichmann, writing in 1782, only four years before Hunter gave to the world his great work on the venereal, described, as I understand the excerpt by Kaula, simple gonorrhœa as "a continual flow of semen drop by drop," a state of matters I should say never seen in this world; while an equally celebrated writer had not long before explained the exhaustion which follows connexion by "the dissipation of the brain." The pathology of Hippocrates, which taught that semen is secreted by all the humors of the body, of Galen that the vital spirit is given off along with it, of the older writers that semen is absorbed to give strength to the muscles; which had been handed down from one generation to another without the slightest attempt being made to see whether there was the least justification for it or not, still flourished in primeval vigor.

I should therefore never expect to produce anything like a full and reliable history of the disease, and having in a work on gonorrhœa said as much as I have to say about this portion of my task, I shall perhaps stand

excused for not pursuing farther a topic which I fancy does not usually interest readers. Those who wish to travel over the traditions of spermatorrhœa, to link together the scattered scraps and patches of medical lore on this point, will find in earlier editions of this work a list of all the references I have been able to meet with; though I can scarcely imagine a more unprofitable task than pursuing such researches. They will also meet with a great deal of information in Tissot's essay,[1] and in the careful and elaborate work of Kaula,[2] a pupil of Lallemand. To them as trustworthy guides I consign the reader.

Hunter, who introduced the system of Bacon and Locke into medicine, is I believe to be regarded as the first author who treated and described[3] the disorder in question, still however in rather an imperfect manner, ranking it as one of the reversed actions which make up impotence. He separated it from priapism, saying it ought to be called seminal weakness, and defining under this head emissions without erections, although really such discharges are, in a large proportion of cases, accompanied by very strong erections. He was followed by Sir Everard Home, who clearly recognizes[4] the serious effects of emissions. But no one seems to have cared to tread in their steps, and it is not until we come to the time of Lallemand, Curling, and Phillips that we find spermatorrhœa elevated to its true position of a special, independent disorder. It is perhaps to the first of these, more than to any writer of the present day, that surgery is indebted for such impetus as has been given of late years to the study of this disease. Enjoying, as he did, excellent opportunities for studying the complaint, he made such good use of them that his work[5] will remain a lasting memorial of his genius and industry. I am well aware that it is open to severe censure, that in many parts it is only too redolent of exaggeration and bad taste, and that his treatment requires great modification. But for all this, it is quite certain that to M. Lallemand belongs the merit of having done his best to force upon the profession a recognition of the importance of the disorder, of having pointed out the necessity for pursuing the method by which the obscurities surrounding its pathology and treatment can be best cleared up—extended clinical and *post-mortem* observations, and of drawing attention to the necessity for microscopic study of the spermatozoa, discovered in 1677 by "the ingenious German, Hamm," the pathological importance of which had been too long overlooked; attempts in which he was faithfully seconded by M. Kaula.

M. Lallemand found in Mr. Phillips, of Westminster Hospital, an-

[1] L'Onanisme, 1766.

[2] Thèse pour le Doctorat en Médecine, 1846.

[3] A Treatise on the Venereal Disease, 1786.

[4] On the Treatment of Strictures in the Urethra, 1803, vol. ii. p. 243.

[5] Des Pertes séminales involontaires, 1836–42.

other earnest propagator of his views especially as to treatment, the value of which he carefully endeavored to expound, while he warned men at the same time against M. Lallemand's high coloring. The subject was also ably handled by Mr. Adams,[1] a most truthful and painstaking observer, who very properly censured the profession for the way in which they had dealt with it, asserting[2] that cases of this nature ought not to be treated "with levity or indifference." It was reserved, however, for Mr. Curling to produce[3] an account of the pathology and treatment of this disorder, which, while free from the errors and over-strained views of M. Lallemand, was yet thoroughly calculated to lend the subject its due importance; a work with which every person desirous of mastering this subject should make himself familiar.

Present State of Professional Opinion on the Subject.—The present state of opinion about spermatorrhœa, both in the profession and among the public, is not satisfactory; it has never been so, and there does not seem much prospect of improvement. Indeed, ever since there was such a thing as opinion on this subject, it appears, so far as we can learn from reading, to have vibrated in the profession between something very like intolerance and neglect on the one hand, and an amount of ignorance on the other which afforded only too great facilities for quackery; about the growth of which those who have done so much to foster it were among the foremost to complain.

We read now with horror how the leper was chased forth from society, how the maniac and reputed witch were dealt with, how the venereal were driven from Paris under the threat of being thrown into the river if they did not leave, and of being hanged if they ventured to return. We can scarcely understand physicians refusing to treat phagedænic affections because they were seated on the genitals, or the authorities of a city burning a man alive for practicing midwifery.[4] But in point of fact this kind of barbarity, which was always confined to the fanatical part of the community, has rather changed its outward semblance than lost its vitality. The man who has an attack of virtuous horror whenever the subject of spermatorrhœa is mentioned, or professes to be ignorant of its nature or even of its existence; who would ostracize alike the patient suffering from this complaint and the medical man who so far forgets the dignity of his profession as to prescribe for it, is in all essentials the same person as the magistrate who in bygone days enforced his orders with the whip and halter, and the physician who refused the aid of his art to the patient with sloughing ulcer of the genitals.

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[1] Anatomy and Diseases of the Prostate Gland, 1851. [2] Ibid., 1853, p. 59.

[3] Practical Treatise on Diseases of the Testis, 1856, chap. xvii.

[4] "In the sixteenth century, Dr. Werth was burnt alive at Hamburg, because he attended a woman in her confinement."—*Edinburgh Med. Journal*, vol. xviii. p. 845.

But there are men who are neither intolerant nor ill-informed, men for whose opinions on other questions I entertain a high respect, who conscientiously believe that spermatorrhœa exists only in imagination, that a patient who thinks he is suffering from it really labors under a delusion, and requires nothing more than moral means, particularly exhortations not to think about his complaint, and to read no books on the subject; that no sensible, properly minded person ever fancies he is affected in this way; and that the professed victims are essentially timid, lazy, sensual, egotistical people, who require to be sharply told that they should give up such sick fancies. Then why do not these gentlemen lay before the world a few cases successfully treated in this way? Strictly correct anecdotes and solitary instances of benefit, however valuable they may be in themselves, do not meet the exigencies of the case. I, for one, should be very glad to avail myself of any more simple and speedy method of treatment than that laid down in the following pages; but I should like to see all this excellent advice reduced to a practical shape, and be satisfied of its superior therapeutic value, before adopting it, seeing that my experience is to the very contrary. For whatever may have been the good fortune of others, I have been unlucky enough to meet with such numbers of patients, many of them energetic and resolute in a high degree, who had tried moral means with the result of complete failure, that I have long lost faith in them as usually practised. I do not contest their power to cure those cases of spermatorrhœa which would get well of themselves; but in more advanced forms of the affection, I believe them to be about as thoroughly useless as they would be in any analogous form of disorder which the reader may choose to imagine.

Unless these gentlemen will say point blank that their system of trusting to time and good advice is infallible, there must certainly remain some cases which demand further measures. How these are to be dealt with we must, I presume, find out for ourselves, as no provision is made for such a contingency, which indeed does not usually appear to be taken into consideration. For such cases then, if for no others, that is supposing the possibility of their happening at all to be admitted, I would suggest medical treatment, as also occasionally a dispassionate inquiry into the pathology of the disease, and the results of treatment as usually understood; when I predict it will be found that the advice so confidently spoken of as adequate to cure the disorder entirely fails to relieve a great number of cases, and frequently, where it seems to do good, only suspends the attack, which returns with any great excitement or ill health; while the urethra is constantly left in a state of hyper-sensitiveness, which I have met with in a very marked form years after everything that was considered necessary had been done.

If it be merely the ignorance of the lay patient which impels him to consult a physician about such matters, if his alarm be so puerile and

groundless, how comes it that medical men, when they think they are affected in this way, feel so much anxiety about it and so readily submit to treatment? For that many of them feel and act thus, I am quite in a position to know. I have had the pleasure of prescribing for a pretty large number of such cases, and though I have often succeeded in inoculating a medical patient with a firm belief in steel and injections, I never yet saw one so impressed with the value of moral means, as to suggest that they should be exclusively trusted to in his own case. On the contrary, I have always found that faith in an occasional emission being a natural occurrence, demanding only change of air and chastity of mind and body, vanished at the first emergency; nor do I speak here of students, in whom the anxiety of inexperience is almost a thing to be looked for, but of men in the full vigor of life and intellect.

The doctrine that spermatorrhœa is a mere phantom, the offspring of a morbid fancy, to be discouraged as much as may be, has done and is still continuing to do an amount of harm which it is scarcely an exaggeration to speak of as incalculable; and the mischief is all the greater because this opinion is upheld by men who justly enjoy the confidence of the profession. But its ill effects are not restricted to the misery it so often inflicts upon the patient. Ingenuity could hardly devise a more efficient stimulus to charlatanism of the worst kind; for it is both natural and inevitable that a man, who finds his case rejected or misunderstood by the physician he consults, will turn to those who so loudly proclaim their readiness and ability to assist him. The moral aspect of the doctrine may be unassailable. I entertain no doubt that it springs from motives of the best kind, that a really humane wish to save the patient from the consequences of needless alarm lies at the bottom of it, but the result of it has been none the less unsatisfactory. Looked at from a social point of view no worse system could have been adopted, and the effect of it has been a state of things which cannot too soon be ended.

With regard to medical men who may happen to be suffering from these disorders, they know, or at any rate they can easily learn for themselves, who is the fittest person to consult about their own maladies; but the position of a layman is very different, and indeed in my opinion so full of difficulties that, till a radical change is effected, quackery will be as rampant as ever; for whether the patient's ills are real or imaginary, his mind is so full of them that he will seek for relief at any cost and anywhere. Many years ago a man, whose motives in speaking out so plainly were certainly above suspicion, Dr. Golding Bird, called attention in pointed terms to the urgent nature of the patient's anxiety on this head. "I hardly know," he says,[1] "any state of mind more difficult to treat than that which is so often present in patients who believe themselves to

[1] On Urinary Deposits, 1857, p. 378.

be the subjects of spermatorrhœa. Although, perhaps, there may be no reason to believe that losses of this kind are actually going on, the patient's mind is too generally made wretched, and his happiness blasted by the iniquitous pictures drawn of the presumed result of spermatorrhœa by the miserable harpies who have so generally taken possession of this department of practice." I heartily endorse every word of this, but it seems to me that Dr. Bird would have taken a more practical mode of preventing patients from being made "wretched" and having their "happiness blasted," if he had inculcated the necessity of carefully studying an affection capable of producing such results.

I will suppose that a patient finds or thinks he is suffering from spermatorrhœa, for practically it comes to the same thing, and that he is strong-minded enough, as happens perhaps with one patient in ten, to write to one of the medical journals, asking what he ought to do. I need scarcely say he is pretty certain to receive an answer to the effect that he must avoid advertising quacks, read no works on the subject, and either consult his ordinary medical attendant or the nearest respectable practitioner. Now, I have no wish to sit in judgment on the journals for acting in this way. It might very likely prove difficult enough for them to devise a better system, while to recommend any particular surgeon would lay them open to a charge of favoritism. But for the patient himself, such an answer really amounts to something like a farce, nor can one well imagine any piece of advice less likely to be practically useful. That it is well meant I in no way doubt; what I question is the possibility of giving effect to it. Most persons so situated, especially young men, have not ordinarily a medical attendant; and recommending "any qualified practitioner" means simply referring him to a body of gentlemen who, for the most part, will, if they can, avoid having anything to do with the case. I can say this quite advisedly. I believe there is no malady which men dislike to have under their care so much as spermatorrhœa.

In my opinion there is only one remedy for this state of matters, and that is, for the leaders of professional opinion openly to recognize the disease. Until the pathology and treatment of it form a more prominent feature than at present in the regular course of lectures on surgery and in surgical works; until it is no longer tacitly understood that spermatorrhœa is a topic to be mentioned only in a furtive way, or rather to be shunned as much as possible; to be looked upon as a trifle not worth taking into consideration, only suited to those who have nothing better to do, it will remain one of the happiest hunting-grounds for the charlatan.

Dr. Handfield Jones says[1] it "is an unpleasant subject," but he does not "see how we are to fulfill our duties as medical advisers if we ignore

[1] Studies on Functional Nervous Disorders, 1870, p. 730.

it." Precisely. But the more unpalatable the subject, the more necessity for urging that it should be taken up; men do not require such a stimulus when the task is attractive; and Dr. Jones might have added that the "medical adviser," who is consulted by an anxious trusting patient about a matter so important to his health, happiness and prospects, and who deliberately ignores a disease recognized by so many eminent men, goes something beyond not fulfilling his duties.

That the disease exists to a very great extent, far greater than is generally thought;[1] that it yearly reduces hundreds if not thousands to impotence and all its attendant ills, hypochondria, weariness of life, insanity, and so on; that not only every town, but every village, could show victims of this neglected malady, are facts which I feel assured will not be disputed by those who have looked into the subject. And the remedy for all this misery is to leave matters to take their course! Certainly ingenuity could scarcely contrive a more efficient system for cutting the patient off from all chance of relief, and encouraging those who are ready to plunder him and aggravate his sufferings. Not one patient in fifty would, if he could avoid it, go to a quack; that he is driven to such a step is in a certain degree due to the present state of professional opinion on the subject. As a body the public are powerless in the matter.

Let men try to burke the question as they may, its vitality will defy their efforts. They may fall back upon a policy of inaction, but the evil will still bear its fruits. The sources, from which the canker of quackery is fed here, spring from two of the most powerful passions in the human breast, and though they may be diverted into healthier channels they cannot be dried up. Mere censure is of no avail to put down the charlatan; the law is almost inoperative, and there is little prospect of improved legislation on this head. But were every quack to receive his deserts to-morrow in the shape of penal servitude, would the patient be any the better, and would the nefarious system thrive any the less? I doubt it. The patient would know as little where to apply for aid as he does now; and quackery, if overthrown in this form, would rise only more vigorous than before in another guise, and gather from its temporary suppression new materials for strength and mischief.

> Per damna, per cædes, ab ipso
> Ducit opes animumque ferro.

The hook might be more delicately baited, but it would still be thrown to the victim; the web might be better hidden from view, but it would

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[1] Le perdite seminali portano seco gravissime conseguenze; la loro frequenza è assai maggiore di quella che per molti medici si creda."—"Sulle polluzioni involontarii. Del dott. Aliprando Moriggia."—*Giorn. della R. Acad. di Med. di Torino*, 1861, N. 4.

just as infallibly entangle him. Quackery is not easily strangled in the strongest grasp; the only plan I see is to starve it.

I believe one reason why medical men dislike so much to treat these cases is, that they see comparatively so few of them. Yet there is no reason whatever why every member of the profession should not be qualified to manage them, seeing that all that can be said about the therapeutics of the disorder may be compressed into a very moderate space. But it seems to me impossible that sound principles of pathology and treatment can be widely diffused unless they are openly taught, and while fundamental errors as to the functions of the organs pass unchecked, and indeed unheeded. The observation has been more than once made,[1] in medical papers, that an emission once a week or so can do no harm; and though this may hold good of a short period in early life, it becomes a very dangerous tenet when applied, as in the nature of things it will almost certainly be, to long-standing cases and a more mature age. Remedies which continually fail, such as the nitrate of silver, the ergot of rye, lupulin, etc., are spoken of by those who recommend them, if not as infallible, yet in a way which leaves little room for any other conclusion. The disease is said by some writers to be so easily curable, that its treatment can scarcely deserve a second thought, whereas it often taxes all the surgeon's resources; and its very nature is frequently so far misunderstood that we hear it spoken of as an affection of the seminal vesicles, which I hope to show have little if anything to do with it.

That the surgeons of a bygone day should have taught such a doctrine as the last would be credible enough. When men like Mason Good and Swediaur exhibit so very indifferent an acquaintance with the subject, although they profess to treat of it, that, with the exception of their classical nosology, they can scarcely be considered very much in advance of the empirics contemporary with them, we can scarcely wonder that those who sought for information in their writings failed to find it; but in the present day, when we have such facilities given for the study of physiology, it is scarcely what we should have looked for, and it does not require much sagacity to predict, that till some better methods of observation are introduced, the treatment of spermatorrhœa will scarcely be in a satisfactory position. Should the reader consider that the foregoing statement requires qualifying, I must ask him to turn to Mason Good's description of his "entonic" and "atomic" spermatorrhœa[2] and say if it can be considered the production of a man who really understood the disorder.

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[1] Medical Times, 1857, vol. i. p. 453; and 1859, vol. ii. p. 545.

[2] The Study of Medicine, 1829, vol. v. p. 89.

CHAPTER II.

PATHOLOGY OF SPERMATORRHŒA.

UNDER the name spermatorrhœa I propose to group all discharges which result from morbid states of the testicles and excretory passages, producing greater expulsion of semen than is compatible with the maintenance of a healthy condition of the organs of generation.

Foremost among the disorders which may be referred to this group stand involuntary seminal emissions, which constitute a large proportion of the cases we are consulted about by spermatorrhœa patients, and to which I think the name spermatorrhœa ought to be confined. Next we have gleet of the seminal vesicles, in which, especially when accompanied by straining on account of constipation, we may find occasional expulsion of a few spermatozoa. Thirdly, there may be an imperceptible draining away of semen, in which, without any effort, a small quantity of this fluid gradually makes its way into the bladder, and is found in the lowest layers of the urine. Mr. de Meric, then president of the Harveian Society, in a discussion on a paper on spermatorrhœa by Mr. Gascoyen,[1] clearly stated that he considered this disease to be spermatorrhœa; and that whatever might be said to the contrary, the disease (spermatorrhœa) did exist and in this form; but inasmuch as seminal emissions are a real, serious, and sometimes obstinate disease, while this affection is slight, and never likely to affect either the health or the vital powers, I submit that the classification above is the better one. Lastly we find, not as integral parts of the disorder, but ranked by persons in the same category, certain affections of the prostate resulting in hypersecretion of mucus, and discharge of mucus from Cowper's glands, the urethra and bladder: disorders which, when they have resulted, or when the patient fancies they have resulted, from masturbation, often exert, through the mind, a most injurious influence over the virile powers.

Whatever objections may be made, I think the word spermatorrhœa ought to be restricted to involuntary seminal emissions. They form not only by far the greatest number of the cases of this class, but they are infinitely of more importance than all the rest put together. The name has been objected to, and we have been told that the term ought to be applied to cases in which the semen trickles away insensibly from the

[1] Dec. 7, 1871.

urethra—a disease so rare that I have never seen a case, and strongly doubt the existence of it; to which the term spermatorrhœa is not a whit more suited than it is to emissions, the verb ῥέω expressing quite as much the force of a stream as a trickling. Lastly, the arrangement I have suggested offers the advantages of collecting several allied and often contemporaneous disorders into one focus, with a prominent and easily recognized affection as a centre round which they may be arranged.

Divisions of Spermatorrhœa.—This disorder may then be divided into —1, nocturnal emissions; 2, diurnal emissions, forming together spermatorrhœa proper; and 3, the complaints just spoken of. It may perhaps save some trouble if I at once admit that this arrangement is crude and unscientific enough; but it is to be borne in mind that the object of the work is practical utility, and that I wish to say what I know of the subject in the simplest and most intelligible form. Dr. Albers, of Bonn, who has paid great attention to the subject, recognizes three leading forms of spermatorrhœa. 1. Simply an abnormal discharge of seminal fluid. 2. The same associated with morbid changes in the seminal receptacles and ducts, and in the bulbous urethra and prostate. 3. Cases presenting a combination of the two foregoing conditions. I cannot say that I quite understand the necessity for the last division; in all practical points it appears to be comprised in the second.

1. *Nocturnal Emissions* constitute by far the greater part of the cases we are called upon to treat. When not severe or long continued, they seldom require more than cold bathing, out-of-door exercise, abstraction of the thoughts from the subject, and mild aperients combined with tonics. There are many cases in which it is difficult to say whether they call for any treatment or not; but as a broad rule it may be stated that they do so whenever the patient feels worse after them, and that in men who have reached the age of three and four and twenty, anything beyond one emission a month requires attention. I know this statement has been impugned, but I am quite prepared to abide by it. I did not put it forward till I considered I had quite sufficient evidence in my hands to justify me in doing so. I may be wrong in the conclusion I have ventured to draw, but I feel warranted in adhering to it.

Among those who have contested this view is Dr. Campbell Black.[1] He admits the difficulty of drawing the line of demarcation, but he entirely denies the justness of the view which I have taken. "If it be asserted," he says, "on the one hand, as has been done by writers on the subject, that more than one involuntary emission in a month, in continent persons, constitutes spermatorrhœa, then I assert most unhesitatingly that there is not one continent young man in fifty in Great Britain who is not suffering from spermatorrhœa!" He would, therefore, limit interference

[1] Functional Diseases of the Renal, Urinary and Reproductive Organs, 1872, p. 198.

to those cases where the emissions occasion lassitude, fancied or real debility, or mental worry, and occur more frequently than once in ten days or a fortnight.

The first part of the paragraph is a specimen of the way in which assertions are made in his work; the whole paragraph contains as many errors as statements. It must be impossible for any person to compute the number of continent young men in Great Britain, as this presupposes a personal and individual examination of all the male population of this age, who must number at least two or three millions; it is simply out of the question that any person can of his own knowledge know what their real condition actually is. Any conclusion here must be a mere matter of inference, and not of positive assertion; but, according to my experience, inference does not support Dr. Black's assertion, but quite the contrary. Of the patients who, during the last thirty years, have consulted me for affections of this nature, real or fancied; for gleet, gonorrhœa and syphilis, a very large proportion were not troubled with emissions at all. I have likewise had considerable opportunities of examining young men suffering from a complaint which is often supposed to have some connection with seminal emissions and improper practices—I mean acne—but here, too, I met with the same response. Most of these patients, too, were habitually continent.

Perhaps the reader does not sufficiently appreciate the necessity for maintaining my position against so formidable an antagonist as Dr. Black, and therefore I will explain. This gentleman, though opposed to almost every person who has investigated the affections of which he treats, is an infallible authority on every part of the subject; and perhaps never more so than when contradicting himself, which he is somewhat apt to do. Whether "musing on the banks of the hallowed Molendinar" (p. 24), or "opining" on the cause of enuresis, there can be no appeal from his decisions. He has begun a righteous crusade against, not only the iniquity of persons like myself, but also "the votaries of instrumental prostitution" (p. 228), "the fecula of quackery," and "senile imbecility." While other writers either exaggerate or depreciate the importance of spermatorrhœa, he alone holds the golden mean. It is pleasing to reflect that, at a time when, according to Dr. Black, quackery and imposture of the worst class abound in every rank of the profession (pp. 67, 228, 273), except those shut up in garrets (p. 67), a man has arisen who is purity itself, and has the moral courage to proclaim that he is so. He alone can "reconcile morality with physiology" (p. 267), and the man who will not do so according to his method is "a fool," "a bigot" or "a coward" (p. 301).

To those who, like myself, have always believed that medical men are, with few exceptions, truthful and honorable; and that Scotchmen, while ever among the foremost in the ranks of science, are, considering their

strong religious feelings, singularly free from the fault of affecting such high-flown immaculacy, of launching sermons and excommunications under the guise of professional works, and of imputing the worst motives to every person who may happen to differ from them, this sort of thing must be rather a surprise; whether it will be an agreeable one I leave it for them to say. Should any of my readers think I am unjustly assailing Dr. Black, I ask them to read his work; and I don't know that I can well wish it a worse fate than to be read by a person of common discernment.

Professor Gross goes as far in this direction as Dr. Black. He says [1] "pollutions are natural to all men," and in continent men "emissions at intervals of two weeks are indicative of excellent health; they are "not at all inconsistent with temporary good health when they occur once or twice a week, provided they are not followed by symptoms of nervous disorder;" but "are abnormal or pathological when they are followed by headache, backache, slight enfeeblement of the functional powers of the brain" and so on. The diffusion of such opinions has only too often blighted the health, happiness and prospects of the patient. Those who have really studied the disease will indorse what I say; they know, that of the bad cases which come before them, a large number are due to men having been led by such pernicious counsels to neglect the complaint till mischief has been done. With equally good reason it might be said that diarrhœa and headache are "natural to man," and that their occurrence every fortnight is indicative of excellent health. On the same grounds it might be argued that indulgence in drunkenness once or twice a week is harmless, seeing that it is no way "inconsistent with temporary good health" in a great number of persons, and only "pathological" when it brings on headache. I suppose too it will strike the reader that emissions which induce "backache and enfeeblement of the functional powers of the brain" in a certain class of patients are not likely to do the others any particular good; and that it would be just as rational to despise the first signs of phthisis because they are not inconsistent with temporary good health, and only allow that they call for treatment when the patient is visibly suffering from them. Lastly, to speak of a disorder as becoming pathological is to make a complete misuse of the term. Mr. Adams [2] goes a step farther than either; an emission once a week is, according to him, not to be regarded "as more than an effort of nature to relieve herself;" a process in which she does not seem to me to get on very successfully.

An opinion prevails, as most of my readers are aware, among medical men, that a few emissions in youth do good instead of harm; it is difficult to understand how an unnatural evacuation can do good, except in the case

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[1] Practical Treatise on Impotence, 1883, p. 135.

[2] Op. citat. 1853, p. 57.

of unnatural congestion. I have, however, convinced myself that the principle is wrong; lads never really feel better for emissions, they very often feel decidedly worse. Occasionally they may fancy there is a sense of relief, but it is very much the same sort of relief that a drunkard feels from a dram. In early life the stomach may be repeatedly overloaded with impunity, but I suppose few would contend that overloading was therefore good. The fact is that emissions are invariably more or less injurious; not always visibly so in youth, nor susceptible of being assessed as to the damage inflicted by any given number of them, but still contributing, each in its turn, a mite towards the exhaustion and debility which the patient will one day complain of. At the same time it is very far from my wish to tell the patient that, because he has an occasional emission, he is suffering from spermatorrhœa. Equally I should look upon it as quite unnecessary for a patient to continue the treatment when the emissions have become reduced to one occasionally. I do not seek to extend the bounds of the disease beyond what I have stated, and think that in both cases the powers of the constitution and the effects of reliable advice should first of all have a fair trial.

What might be considered as just something more than one emission a month, say merely for the sake of precision two emissions in that space of time, may not do a strong, healthy, continent man any harm, or at all events any very noticeable harm, for some years at least; but more delicate persons often complain of lassitude even after this, and in time the strongest feel the strain on the system. If we knew that we could always keep the disease at this level, if we could feel assured that sooner or later the powers of the constitution would step in and remedy this defect in the working of the functions, there would perhaps be no necessity for ordering anything particular in the way of treatment. But the fact is that we can do nothing of the kind; I have traced back far too many cases of spermatorrhœa to neglect of a period when the patient was not laboring under anything more than an emission every two or three weeks, to feel any confidence in the natural efforts of the system. I hold the latter in utter distrust here, and have repeatedly endeavored to show that the procreative structures have in themselves very little power to throw off disease. While no disturbing circumstances occur, the patient may go on for years without getting much worse, may even get a little better; but the first bad illness or shock, the first long, hard strain on mind or body, will only too often increase the number of discharges to one, two, or three a week; and then the patient begins to appreciate the value of the statement that one or two in a month can do him no harm.

But irrespective of ill health or accidents, or any overwork of mind or body, it is certain that some men are born with a strong constitutional predisposition to this kind of thing; that these emissions, even when not at all frequent, tend, if neglected, to become in process of years more

frequent. A medical man, who may have adopted the expectant theory, can rest assured that, if his patients have sufficient confidence in him to remain long enough under his care, some of the cases which he considers at first unnecessary to treat will, without assistance and of their own natural impulse, gravitate into a condition requiring all the aid he can give them.

Some persons will cavil at this, and say that, even if well founded, it is only calculated to occasion unnecessary alarm. The answer is, that these are people practically unacquainted with the disease. They may have heard about it, may possibly have treated a case or two, or even have gone so far as to read part of a book on the subject; but they have never studied the matter, they have never traced or tried to trace its results to their true cause. They really know no more about it intrinsically than they do about the diseases afflicting the inhabitants of Jupiter or Neptune, and their opinions are of about as much value in the one case as in the other. I am quite at a loss to see why it should be good practice to nip one disease in the bud, and leave another to continue its ravages unchecked till it gets beyond mastering: why it should be thought quite right to remove a scirrhous tumor so soon as ever its nature is made evident, and yet allow seminal emissions to go on till they injure both mind and body.

During the last thirty years I have always had medical men under my care for one or other of the complaints which I have classed under the name of spermatorrhœa. I have asked most of these gentlemen to say, now that their attention was fixed on their own cases, if they could detect any exaggeration in what I had stated: begging them to understand that all I cared for was to get at the truth, and that I wished to hear their opinions and not the reflection of my own. The answer has generally been that they knew only too well there was nothing overdrawn in the picture; some of them were candid enough to admit, that if they had not suffered in their own persons they would have thought the coloring rather too sombre, but that they had really never reflected on the subject. They were, however, convinced enough by this time that the discharges, which they had so lightly treated at one time, were really all the while doing them mischief of a very serious nature.

If, then, anything that I could have been silly enough to say on this head be simply calculated to alarm laymen, surely it ought, if so unfounded, to have no sort of influence with medical men. If hundreds of educated gentlemen, practising their profession, and having their observation sharpened to the highest degree by the study of their own cases, recognize as truth what we are told is a gross exaggeration, their medical education can have done little to qualify them for the exigencies which they are called on to encounter. If an emission once a fortnight be a slight, manageable, and transient evil, it is strange that they should throw up practice, injure their prospects, and break off marriage engagements

in order to free themselves from the incubus of the disease; yet they systematically do these things with their eyes open, and for affections of which this has long been the only sign. Is it possible that both sorts of patients are wrong, and that one or two self-constituted judges, who may or may not have seen a few cases of spermatorrhœa, are right? Is it in any degree probable that many hundreds of patients, knowing nothing of each other, would describe separately a particular result as flowing from a given cause, and yet one and all be in error? Yet scores of patients, medical and non-medical, do this every year. I could fortify myself here with the opinion of Trousseau,[1] who has seen a good deal of this complaint, but I prefer to do nothing of the kind, and to be alone responsible for the accuracy of the statement. After carefully weighing all that has been said against what I put forth, I deliberately elect to encounter the censure which it may bring with it, and appeal to impartial clinical observation in support of the view.

2. *Diurnal Emissions*, that is to say, emissions of semen, almost invariably occur as a result and complication of night discharges. They are not very common,[2] and are generally seen in nervous excitable persons, though this is by no means a constant rule. In some persons suffering from nocturnal emissions the organs become so irritable that the act of caressing a dog or a horse, prolonged riding in a carriage, or contact of the perineum and buttocks with any soft, bulky body, causes an imperfect erection followed by a seminal emission. I have seen several undoubted instances of this, and in one patient under my care the tendency to emissions had become so strong, apparently in consequence of some strong preparation of cantharides and capsicum having been given him when suffering from spermatorrhœa, that he could not travel even a short distance in a railway train, unless when standing, without having an emission. In the upright position he always escaped. He told me that on one occasion, while coming from Brighton to London by the morning express, he had had two emissions solely in consequence of having to remain seated; and it is to be remembered that these were unmistakeable ejaculations of semen. Two very similar cases have since then occurred in my practice.

But under the head of diurnal emissions are included emissions of mere mucus, which often trouble and alarm such patients more than the others. In some persons there is only a weeping of mucus; in others this is ejaculated, or at least propelled to the mouth of the urethra, in the form of a slight gush of fluid, often attended by a very disagreeable sensation, and followed, when severe and of long standing, by considerable

[1] Lectures on Clinical Medicine, 1870, vol. iii. p. 445.

[2] Dr. Dicenta examined 400 persons, 203 of whom suffered from spermatorrhœa, and found not an instance of day emissions among them.—*Studien und Erfahrungen über die Samenverlüste.*

prostration. Some patients have several of these in a day. I have examined many specimens of this discharge without finding any spermatozoa, though it is occasionally loaded with inflammation corpuscles. The urethra is often red and tender, but M. Lallemand's account of the condition of it is ridiculously overdrawn. He speaks of the frantic dread patients entertain of a bougie being passed, and their cries of agony at the operation; phenomena which I have never witnessed, though I have examined far more cases than M. Lallemand appears to have seen when he wrote his work. But indeed his exaggerations have been forcibly pointed out[1] by his own countryman M. Cognard, who has written one of the most sensible and practical articles on the subject I have ever read; a memoir which I commend to the notice of those who speak of the disease as imaginary, always supposing such people capable of believing that they stand in need of instruction on any point whatever. M. Lallemand grounded his treatment of this disorder on the dogma that seminal emissions are kept up by the highly irritable state of the urethra near the mouths of the ejaculatory ducts, a view which certainly only holds good to a very limited extent. I quite agree with Dr. Bartholow when he says,[2] "there is no proof that the anatomical lesions described by this author were causative of spermatorrhœa or even accompanied by it." He adds that a careful autopsy of a young man, known to have practised masturbation for years, revealed no morbid change whatever beyond "a catarrhal condition of the mucous membrane of the seminal and prostatic ducts and of the vesiculæ seminales." Mr. Phillips, however, advocated[3] the same view as M. Lallemand. Mr. Gascoyen[4] was of much the same opinion; he says that if the irritable condition of the nerves continue, emissions may become so frequent and scanty as to occur almost without the knowledge of the person until they prove a source of injury to him. I have never seen this in the worst cases of day emissions; at night some few patients suffer in this way, but never, according to my experience, to any extent.

Pathology; *predisposing Causes.*—Dr. Carpenter gives[5] the following explanation of one great point in the pathology of this affection. "The secretion of the seminal fluid," he says, "being very much under the control of the nervous system, will be increased by the continual direction of the mind towards objects which awaken the sexual propensity. Thus, if intercourse be very frequent, a much larger quantity will altogether be produced, although the amount emitted at each period will be less."

I cannot say that I quite understand what Dr. Carpenter means, and

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[1] Nouveau Dictionnaire de Médecine, tome xxxiii. p. 482.

[2] Spermatorrhœa: Its Causes, Symptoms, Results and Treatment, 1879, p. 19.

[3] Medical Gazette, vol. xxxi. p. 452.

[4] British Medical Journal, 1872, vol. i. p. 94.

[5] The Principles of Human Physiology, 1869, p. 827.

I strongly suspect that he himself did not understand what he meant, by stating that the secretions are very much under the control of the nervous system. Such obscure expressions as these have ever been the bane of medicine. A great deal appears to be said, but when we come to look for the sense, the pith of the matter, for something tangible, we find little beyond mere words and a *caput mortuum*. Secretions are so far under the influence of impressions made upon the nervous system, that violent mental agitation will increase some of them, such as perspiration, tears, etc.; arrest the expulsion of others, as that of the bile when jaundice is brought on by fright; or possibly interfere with the quantity or quality of the secretion in a third set, as in the case of dyspepsia produced by excessive anxiety, and so on. But I have yet to learn that any amount of mental activity directed to the liver, stomach, or pancreas will increase the secretion of bile or gastric or pancreatic juice; indeed, I am rather sceptical as to whether highly organized products can be increased beyond the normal amount, that is to say, as regards their more important constituents, although, of course, the mass of water and mucus may be raised to an almost indefinite quantity; yet this is what Dr. Carpenter's words may be fairly construed to mean if applied to other organs than the testis. Judging from what I have seen, and especially from noticing that in many persons the excitement from connection, in which the natural stimulus of the organs is brought into play, is so much less than when an emission occurs, when the organs are under the influence of an unnatural excitement, I should be inclined to assign much more importance to the nervous exhaustion than to the mere loss of semen, the waste of the important constituents of which is possibly not much greater than in health; and if it be urged that we find this prostration when the semen is simply flowing away in the urine, or thought to be so, I reply that that is due to previous excitement. This opinion, I may add, is quite in accordance with that expressed in a very careful article on the subject in the *Medico-Chirurgical Review*,[1] a journal which ever honorably distinguished itself by its efforts to secure a proper recognition of this disease; with the opinion of Mr. Curling,[2] and with that of Dr. Humphry.[3] Besides, I regard one fact, sometimes noticed by patients, that an emission without sensation weakens them much less than one with sensation, as strongly favoring the view I have ventured to put forward.

M. Trousseau seems to think[4] that an emission causes no more loss of power than a single connection. I must protest against this statement. When both are unfrequent the difference is perhaps so slight as not to admit of computation; but if we can rely on the statements of patients,

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[1] 1864, Jan. p. 163.

[2] Diseases of the Testis, 1866, p. 454.

[3] A System of Surgery. Edited by T. Holmes, 1864, vol. iv. p. 609.

[4] Op. citat. vol. iii. p. 458.

the balance when they occur often is quite in favor of connection. Men who, for the time at least, feel rather relieved than otherwise by the latter, constantly complain of headache, prostration, and weariness after a single emission. The stimulus is wholly natural in one; quite the opposite in the other, and *ab initio* more exhausting. And I must protest quite as strongly against the doctrine taught by John Hunter, and repeated by Sir James Paget [1] as to its occasionally happening, that a voluntary pollution does no more harm than connection, which I regard as a complete error. I consider that Swediaur had Hunter fairly on the hip when he attacked him about this, and it seems most strange to me, that, if there be any truth in the doctrine, the experience of patients should invariably lead them to an opposite conclusion. Of all those who had really attended to this part of the subject, not one whom I questioned ever failed to draw a wide distinction between the effects of the natural and the unnatural forms of emission. A distinct, unmistakeable tendency to emissions is sometimes set up in excitable persons by a very moderate practice of masturbation, even for a few months, whereas nothing of the kind is induced by connection. The latter may not have any curative influence, but it has no power of exasperating the disposition to spermatorrhœa. Looked at from a moral point of view, the doctrine is a still greater mistake than it is pathologically. Even if it were a truth, it ought to be as much shunned as the most pernicious error; for it carries with it as great a capacity for mischief as any maxim ever yet invented for the express encouragement of evil practices.

"M. Lallemand," says Mr. Acton, "thinks that the brain has a great influence as a cause in inciting or exciting spermatorrhœa." I quote the phrase from Mr. Acton's work [2] because, from his reproducing it without comment, I presume that he indorses or at any rate understands it. I confess I do not understand it. If M. Lallemand meant that some particular conformation of the brain coincides with a tendency to spermatorrhœa, that great anatomical development of it tends to produce or repress this disorder, why did he not say so? If he meant that great development of the thinking powers, of what in short is understood by "genius," fosters spermatorrhœa, then I submit with all deference that he is wrong, and that biography affords no warrant for such a supposition, for I do not consider the revelations of Rousseau any criterion; indeed I do not think them fit to be quoted for any purpose whatever. It is not at all improbable that Swift suffered from this complaint,[3] as also that Johnson did,[4] but with these exceptions I have found nothing in the lives of more

[1] Clinical Lectures and Essays, 1875, p. 292.

[2] On Diseases of the Urinary and Generative Organs, 1851, p. 233.

[3] Works of Jonathan Swift, D.D., with Notes and a Life of the Author. By Sir Walter Scott, 1824, vol. i. p. 240, &c.

[4] Life of Samuel Johnson. By James Boswell, 1818, vol. i. p. 30.

than two hundred of our greatest men, which evidences the least connection between these two kinds of dispositions. Judging from the context, however, M. Lallemand possibly meant that this great influence of the brain is exhibited in those persons who, when children, manifest a precocious disposition towards venereal propensities; though I should have thought he might as well have invoked the influence of the brain in the case of those early predisposed to chorea or neuralgia. I am inclined to say that the physique of persons constitutionally disposed to spermatorrhœa cannot be defined with any great strictness. No doubt a great many of these patients are excitable, nervous, delicate people, with a strong taste for sedentary pursuits and study; bashful and sensitive by nature, and endowed with a precocious disposition towards the other sex; but there are plenty of exceptions. I have seen some suffering very severely from the disorder with every variety of physical conformation,—tall, bony men; strong, square-set, burly people; often persons of a most apathetic temperament, and no small proportion of men distinguished for excelling in active outdoor sports.

Exciting Causes; Dreams.—Mr. Adams says,[1] the emissions are "excited by dreams;" I must differ from him entirely. Everything I have observed points to the very reverse, to the conclusion that the discharge brings on the dream, even when the patient wakes up while the ejaculation is taking place and yet remembers a long and vivid series of erotic acts. Visions of this kind are, I believe, almost invariably caused by some impression made upon the senses, which seems to be also the cause of those dreams of connection often accompanying incomplete emissions, in which no semen is thrown off. The fact of the dream taking place in such an exceedingly short space of time is no objection, as authentic instances of the same thing happening have been repeatedly brought forward.[2]

Involuntary emissions seem to me to arise from an irritable state of the testicles, vasa deferentia, and common seminal or ejaculatory ducts; a state which might in some instances be looked upon as closely akin to a local epilepsy. Dr. Humphry says[3] the real seat of the malady appears to be in the prostatic parts of the urethra more distinctly than in any other portion of the generative apparatus. Lallemand and Curling also found this part swollen and injected in some bad cases; and no doubt it is often far more tender than it ought to be. Dr. Dicenta considers[4] that the seat of the disorder is in the muscular and contractile tissues of the ejaculatory apparatus, partly engendered by self-indulgence, partly brought on by other causes, such as gonorrhœa, constitutional tendency, neuralgia, etc. Whether any part of the urethra is affected or not seems to me a subor-

[1] Op. citat. 1853, p. 49.

[2] Works of Sir B. C. Brodie, 1865, vol. i. p. 192, 193.

[3] Holmes's System of Surgery, vol. iv. p. 606.

[4] Deutsche Klinik, 1857, S. 179.

dinate question, as it is quite certain that we do not find irritation of this membrane in many cases, and in others only after the disorder has existed a considerable time. It may yield too, and yet the spermatorrhœa remain bad. This disposition appears to extend itself, in obedience to some fixed law regulating what I will venture to define as the law of proportion of constitutions,[1] to the par vagum, sympathetic and brain, and this in certain ill-recognized cycles. Thus in every hundred cases of spermatorrhœa, the surgeon will find a certain proportion in which symptoms of breathlessness and anxiety after exertion show themselves, another number in which the digestion is affected, and a third set where the brain is disturbed; or there may be any complication of these. The irritability in the testes may be set up by any slight causes in some persons, and when once established, a still slighter cause may aggravate it. I have elsewhere[2] tried to show that there is pretty good ground for assuming that these organs may be affected by the electricity in the atmosphere to the extent of taking on inflammation; and it is certain that such disturbance in the electricity as precedes and accompanies thunderstorms, the equinox, close, muggy weather, particularly in early winter, and some other conditions not very well understood, will bring on emissions in persons liable to this disorder. Similarly, poisonous east winds, especially in spring, will often induce an attack. For many years I have been in the habit of requesting persons to keep a calendar of their emissions, so as to see if the number were diminishing, and have repeatedly noticed that they reported such facts.

Fatigue, Disturbance, etc.—Again, it is certain that in some persons any great irritation set up in the brain, muscles, nerves, or stomach will produce an emission. Much anxiety and fatigue have this effect; so have neuralgia, dyspepsia, headache, catarrh, and diarrhœa, or perhaps it would be more correct to say, that the same perturbing cause produces an outbreak of spermatorrhœa and an attack of one of these complications. I presume it is the fact of spermatorrhœa arising from such causes that has induced some surgeons to look upon it as merely one of the protean forms of nervous disorder; but what possible practical benefit they expected to arise from simply calling it nervousness, I am at a loss to see. The results of doing so are often lamentable enough to the sufferer.

A patient suffering from emissions goes to a physician, and tells him that he feels less able to take exercise than before, that his faculties are impaired, and his memory bad; that he has a heavy oppressive feeling in his head, a general sensation of being muddled in the head, or a stuffed-up feeling as if he were going to have a fit. Sometimes there is a discharge of mucus from the bladder or urethra after making water, and the erections are much less perfect than they were. The physician tells him

[1] The Laws of Life, p. 144, &c.

[2] Pathology and Treatment of Gonorrhœa, 1883, p. 227.

that he is nervous, recommends tonics, change of air and rest. The patient finds that tonics set up irritation, that change of air makes him worse, and that the gloom and nervous sensations will not allow him to rest. He feels that he would be better at work if he could bear occupation. Then he goes to some eminent surgeon, and tells him that in addition to the other symptoms he has got spermatorrhœa, having derived this new fact from the discharge spoken of, and suddenly recollecting that he had committed masturbation at school, and that he had heard somewhere that imperceptible seminal emissions occasion such symptoms as he is laboring under. But the surgeon does not believe in spermatorrhœa, so he looks on the disorder as merely nervous, tells the patient there is no such disease as spermatorrhœa, and sends him on his way sorrowing. Perhaps he cauterizes him, or passes a bougie; both operations being, if unaccompanied by proper treatment, utterly useless, if not injurious. Very likely he advises him to have connection, at least I know that scores of patients have told me this was the answer they received. If the patient try this and find himself unable to effect it, he is certain to be seriously and unnecessarily alarmed; if he succeed, he will go on substituting one form of emission for another, till the first period of continence warns him, by a return of the discharges, that he is no nearer a cure than he was. Then the patient wanders from one practitioner to another, and if he do not meet with some one who will grapple thoroughly with the disorder, purge his bowels well, blister the perineum and penis, put him on proper diet, and inject the urethra, till the nocturnal emissions are checked, he will go on injuring his health and worrying about his symptoms till he makes a shipwreck of himself. I am putting no imaginary case, I merely describe what I have heard scores of times.

Atmosphere, Thunder.—Great susceptibility to the action of the atmosphere seems to illustrate very well the disposition we have just examined; and if the surgeon will attend to the symptoms patients often complain of at the time of the equinox and in stifling thundery weather, he will be able to judge for himself. Patients suffering in this way say they are attacked by an indescribable kind of excitement which they cannot resist; there is often great irritability of the urethra, a sensation as if the canal were stuffed full of mucus, a tired aching feeling in the back, frequent desire to make water, often almost total loss of appetite. Should diarrhœa and sickness set in the patient may escape, but if they do not he is almost certain to have one emission at least, probably two, three, or four. To those who have examined the subject, this statement will not appear in any way startling.

Gonorrhœa, Syphilis, Worms.—M. Kaula says[1] that blennorrhagia is the most energetic, most direct cause of spermatorrhœa, a view to which

[1] Op. citat. p. 104.

I must entirely object. When the patient is suffering even very slightly from emissions or merely from some disposition to them, quite a mild attack of gonorrhœa will at once bring on an exacerbation. I have had a patient report that within a month after being infected the night discharges have increased from one in five or six weeks to from three to six in a week. But when no tendency of this kind is present, the patient may pass unscathed both through a bad gonorrhœa and a succession of shorter attacks. He also considers[1] that syphilis may provoke emissions; not more I should say than any other agent equally capable of lowering the health. Fear, shame, worry and impatience are also said to have this effect, instances being mentioned by himself and Lallemand. Nothing of the kind has ever occurred in my practice.

It has been asserted that spermatorrhœa may depend upon ascarides and fissures in the anus; Wichmann considered the former to be one cause of diurnal pollutions, by which he and Ste. Marie seem clearly to have meant "an abundant loss of watery semen at each stool and sometimes at each emission of urine." Having never seen a single case where there was reason to think these unwelcome guests had brought on any form of spermatorrhœa, I feel rather sceptical about the fact having ever occurred, and I am very glad to find that Mr. Curling opposes this view; but as these causes would require removing for their own sake, it is obvious that the treatment must be much the same. In one case in which the emissions were almost epileptiform, ascarides were present; but the seminal emissions subsided rapidly without any proof that the ascarides were removed. In another instance, where these pests had so obstinately resisted all vermifuge remedies that one very experienced surgeon told the patient, that if he were to take out the mucous membrane and scrape away every vestige of the parasites, they would still return, the emissions were cured in the end without any evident abatement of the other nuisance. In a patient with tænia the same thing happened; fifteen months after the emissions had been set right he asked me to treat him for the tapeworm, from which he had suffered quite seven years and for which he had repeatedly tried the oil of male fern in vain, though it was at once expelled by a dose of pelletierine. In all the cases I have seen complicated with the round worm, and they are but very few, masturbation had also been practised to such an extent as alone would have proved adequate to bring on emissions. These last cases, I must admit, all proved very intractable, and it would appear that unless the complete destruction of the parasite is effected, little can be done for the emissions. For such reasons then I consider that worms ought to rank, not among the causes but among the complications of spermatorrhœa, to which section I have referred them in the chapter on treatment. I have also been unsuccessful in tracing emissions to anal fissure.

[1] Op. citat., p. 144.

Results.—Under this head I propose to include the effects of both emissions and masturbation. In many cases it is impossible to separate the operation of one factor from that of another, and both act very much in the same way; consequently, any attempt to treat them separately, for the mere sake of systematic arrangement, would mean purposeless waste of the reader's time.

Among the common but less serious symptoms induced by this disorder, when of long continuance, may be ranked inability to sustain fatigue, mental or bodily, or to follow up a fixed train of thought, some loss of memory not infrequent. Professor Humphry says[1] these are more or less imaginary, "suggested by what has been read;" a view somewhat opposed by the fact, that such symptoms are constantly complained of by persons who have never read a word about the subject. Headache is not so common as might be supposed; but patients often complain of a sensation as if a blow on the back of the head had been sustained, or as if the head were stuffed with wool; sometimes the account is that the head seems too heavy for the neck. Neuralgia is frequent enough, and commonly attacks the face or head; but is perhaps more a complication than an effect. Many patients suffer from pain after eating, with considerable tenderness of the epigastrium and a sense of fullness, eructations, flatulence, heartburn, acidity, and excessive sleepiness after dinner: such patients are generally easily fatigued. Sleeplessness at night is sometimes mentioned; disturbed sleep, with continuous vivid dreaming, is not uncommon; or the sleep may be heavy and unrefreshing. Giddiness and breathlessness occur sometimes; not more, I think, than in other forms of exhaustion. Some degree of palpitation is not unfrequently complained of. In a great many cases the urinary secretion is disturbed, or the bladder is irritable; phosphate and oxalate of lime are common.

Pain in the back may result from or complicate spermatorrhœa (for it is not always easy to assign its exact position to each symptom) and prove very obstinate. A gentleman who had spent part of his life in India, and who said he consulted me rather for this unpleasant symptom than for the emissions, assured me that he had then suffered from it for sixteen years, and that it not only prevented his taking proper recreation, but debarred him from any exercise which required him to stand even for a short time. The urethra is sometimes rendered highly irritable by constant repetition of the discharges. I have known this set up to such a degree, that passing the tube of the injecting syringe, or only a bougie four inches down the urethra, has brought on an emission; sometimes even spasmodic stricture, requiring the urine to be drawn off night and morning for days after, on one occasion lasting quite three months; the latter result being principally seen in patients who have lived in the tropics or suffered recently from gonorrhœa. Burning in the urethra is some-

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

times complained of, and a patient occasionally describes morbid sensibility of this canal as a most distressing symptom. Two patients described a dragging sensation in the perineum, as if the whole region, with the corresponding portion of the urethra, was being lifted up. Annoying pain too in the perineum, not unfrequently accompanied by latent irritability of the bladder, and muscular pains in the thighs and groins, torment some patients, even strong well-grown men, very much. Dull aching of the testicles and even some degree of orchitis may be present.

The more serious effects are amaurotic and epileptiform symptoms,[1] epilepsy,[2] phthisis, insanity, paralysis,[3] and death.[4] I have not observed such results myself, with the exception of insanity, of which I have seen several instances; but there seems no doubt about the facts themselves. Epilepsy appears clearly to have ensued in several cases from excessive masturbation. Mr. M'Dougall saw[5] three instances of this; and Sir Thomas Watson speaks of it[6] as a very frequent result. Dr. Durkee mentions[7] epileptiform convulsions and idiocy as results of masturbation; and M. Lisle, medical inspector of one of the French lunatic asylums, states[8] that spermatorrhœa is a frequent cause of insanity, that the form of derangement is easily recognized, and that all treatment, directed solely against the disease of the brain, is powerless here; whereas the affection is instantly and rapidly cured if the discharges be arrested, unless indeed the case has already gone on to paralysis and dementia. I am quite satisfied that M. Lisle is right, that there is a form of derangement peculiar to these cases, and that, till the emissions are checked no good can be done to the mental affection. I have treated several patients in whom this affection was coming on. Some have been cured, though not quite so quickly as by M. Lisle; while, in a very few, symptoms of mental disturbance, accompanied often by great gloominess and irascibility, have followed to such an extent that restraint has been necessary. Mr. Holmes Coote maintained[9] that there is no cause of insanity more common among the young than masturbation; and Dr. Gray, of the State Asylum at Utica, says the records of the institution show five hundred and twenty-

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[1] Holmes's System of Surgery, vol. iv. p. 604.

[2] The Practice of Medicine. By T. H. Tanner, 1869, vol. ii. p. 212. "Connection of Spermatorrhœa and Epilepsy." By Dr. Russell, Provincial Medical and Surgical Journal, 1860.

[3] Holmes's System of Surgery, loc. cit.; also, Lectures on the Principles and Practice of Physic. By Thomas Watson, M.D., 1857, vol. i. p. 548.

[4] Moriggia, Op. citat.

[5] Lallemand, Practical Treatise on Spermatorrhœa. Translated and Edited by Henry J. M. M'Dougall, 1847, p. xlii.

[6] Op. citat. vol. i. p. 649.

[7] A Treatise on Gonorrhæa and Syphilis, 1864, p. 124.

[8] Medical Times and Gazette, 1861, vol. i. p. 608.

[9] British Medical Journal, 1866, vol. i. p. 186.

one cases admitted "directly attributable to this vice," and that the number is "greatly understated." Dr. Handfield Jones had under him[1] two cases in which almost complete deafness had ensued from this shocking practice; "the effects of spermatorrhœa on the nervous system" of which he speaks,[2] are too general to deal with. Dr. Bartholow even describes[3] very distinctly a peculiar style of countenance induced by this vile habit. It is marked by "a pale and sallow tint of the skin, dilated and sluggish pupils, an oblique line extending from the inner angle of the lids transversely across the cheek to the lower margin of the malar bone," etc., all the symptoms being unknown to me.

Most appalling pictures of the results of spermatorrhœa have been drawn even by writers of eminence. Mental wandering, incoherence of ideas, effeminacy, peculiar grazing sensation occasioned by the passage of the urine, pain extending from the neck of the bladder to the glans penis and margin of anus, irritable testis, shivering, palpitations, sinking sensations, gastric and intestinal symptoms, voracity, diarrhœa, anæsthesia, frightful sensations like those occasioned by electricity, amblyopia or diplopia ending in amaurosis; impairment of hearing, perversion of sense of taste and smell, pains in the head and vertigo; inability to work properly, cerebral congestion and feebleness of voice, total loss of smell and taste; caries of vertebræ.[4] It is scarcely to be marvelled at that any one so direly afflicted should fall, as we are told he does, "into a state of extreme wasting," become "a walking skeleton" in fact; that his skin "acquires a yellowish, leaden hue;" that his eyes "become encircled with a blue ring;" and that he winds up by falling into a state of "brutish stupidity," insanity, and locomotor ataxy.[5] The wonder is that his spirit does not take flight altogether long before matters reach a crisis like this.

But for the foot-note appended the reader might fancy I was quoting from the description of some pestilent charlatan. Quite the contrary; these are the accounts given by learned professors. Coming before the world with all the prestige that schools and academies can lend, they of course at once become current, and thus do far more mischief than any nauseous pamphlet circulated by a quack. The most simple-minded patient more than half distrusts the bare-faced exaggerations of the empiric; credulous as he may be, he still knows that he is devouring stuff got up to frighten him; but if he have the misfortune to read such a description coming from the chair of a professor, he gives up his case as lost. The names of Cognard, Trousseau and Lallemand, from whom M. Trousseau seems to have drawn his inspiration, are enough in themselves. As to medical readers, if they be not familiar with the subject, they must be misled; if they happen to be familiar with it, they can scarcely fail to

[1] Op. citat. p. 732. [2] Ibid. [3] Op. citat. p. 30.
[4] Dictionnaire des Sciences Médicales, tome xix. (1817), p. 4.
[5] Trousseau, Op. citat. vol. iii. p. 455.

condemn the introduction of such imaginary and distorted pictures into what ought to be the domain of sober truth.

M. Lallemand, with all his genius and love of truth, has, as I have said, materially assisted in disseminating exaggerated views as to the influence of spermatorrhœa upon the health. In the case of a man who died of stricture, complicated with cystitis, and abscesses which completely riddled the prostate gland, he attributed death, not to these causes, but to the "profound alteration in the spermatic organs;" this "profound alteration" consisting in an abscess of the left testicle, the corresponding ejaculatory duct and seminal vesicle being full of pus. Now, such an experienced pathologist must have known that both testicles may be utterly destroyed by disease, or cut off, without the least permanent injury to health. Another patient had suffered from serious derangement of the nervous system and digestion long before a cerebral affection also set in; yet these were not enough, and the "growing influence of the seminal discharges on the whole animal economy" is called upon for help.

Severe as may be the penalty paid for youthful error by men of the present generation, their sufferings are at least equalled by those recorded in bygone days. It is, as I have said, almost always impossible to make out how much is due to the spermatorrhœa, which it is to be remembered often enough occurs spontaneously, how much to the odious habit, which seems in the last century to have been pursued with something like the fury of madness, and how much to excess in connection; but at any rate the conjoint effects, as recorded by Tissot, quite vie with anything heard of now-a-days. Drying up of the brain till it was heard to rattle in the skull, cataract, violent contraction of muscles, fleshy growths on forehead, calcareous sputa, total inability of the patient to feed himself or to hold up his head, so that it had to be supported by an attendant, such complete transformation of him that he could not be recognized for a human being, passage of blood instead of semen; besides a host of symptoms and affections, such as fever and rheumatism, which had almost certainly nothing to do with the matter. No wonder that death frequently ended the troubles of patients in those times.

Properly speaking the authors ought to have discriminated here carefully between two such very different classes of cases as those chiefly due to mere continuance of the emissions, and those arising principally from long persistence in masturbation. The distinction, though so completely overlooked, is perfectly practicable and most important. When seminal discharges have begun merely from constitutional tendency to them, or when the wretched practice of self-abuse has only been carried so far as to set them going, we rarely have, as a result, more than some, and often only the slighter, of the symptoms mentioned at page 320. Dyspepsia is not unfrequent; mania of the kind described by Dr. Lisle occurs, though very rarely; great depression of spirits, exhaustion and inability to fix the

attention, are not unfrequently complained of. But generally, in all the more serious results, masturbation plays a most important part. Such complications as epilepsy and paralysis are, I believe, always—mania generally—more due to it than to the emissions it sets up.

Dr. Erskine Mason speaks[1] of chronic inflammation of the prostate as being brought on by masturbation. He describes it as marked by sense of fullness and weight about the rectum. When digital examination is made the gland is found considerably enlarged, somewhat painful, and projecting into the bowel; the common signs, in short, of this state. He also adds a discharge of stringy mucus, increased by hard fæces passing over the prostate, frequent calls to void urine, inability to empty the bladder without straining, uneasy sensations in the region of the groin, weight and pain in the perinæum, sometimes also irritability about the anus, and painful defæcations, low spirits, dyspepsia, languor, and headache. I suppose we are all of us familiar with the local symptoms here as results of gonorrhœa; as sequelæ of masturbation they are in their entirety quite unknown to me. I have seen some of them, such as sense of weight and fullness in the region of the prostate gland, in a mild form in some obstinate cases of emissions, and I need scarcely say that the general symptoms accompany prostration induced by many other causes.

Acne is constantly spoken of as resulting from spermatorrhœa. At a meeting of the Willan Society one speaker said, and quoted an eminent authority in support of his opinion, that every young man suffering from acne had been guilty of masturbation; I have questioned a fairly large number of young men laboring under this complaint without getting at any evidence which would justify such a sweeping statement. But whatever way the question may be settled I am satisfied of two things, one of which is that acne does not prevail to any usual extent among spermatorrhœa patients; the other that the spermatorrhœa may be cured without the least visible impression being made upon the disease of the skin.

Prognosis.—1. Taking, as the date of the appearance of emissions, the time when they began to occur rather frequently, it may be fairly laid down as a rule, that if they begin to abate spontaneously within the first year or so, the disease, unless it be interrupted by gross imprudence or an attack of gonorrhœa, usually continues to decline, and nothing in the way of remedies is required. Also that if, within this space of time it be subjected to treatment, it almost always does well and does not call for much medical aid.

2. Generally, the younger the patient the quicker and easier the cure. But sometimes the reverse is met with. I have known the disease prove very tiresome in a patient under twenty years of age, and I have seen a man of seven-and-twenty cured in a month by a simple prescription of

[1] American Journal of Syphilography and Dermatology, vol. i. p. 290.

steel and aperients; while a gentleman, nearly forty-five years old, who had long suffered from the complaint and spent many years in India, began to improve so immediately and steadily, that the end of a very short time he stated that he had only had one emission in five weeks, and long after reported himself quite well.

3. When emissions have lasted two or three years they may in any given case prove very troublesome, and are often as difficult to cure as when they have been allowed to go on for ten or fifteen years. Although the majority of cases can be satisfactorily dealt with, there will still remain a large number marked by great severity and obstinacy; and I must observe that in forming this conclusion I have relied solely on cases which I have had under my own care through their whole course, entirely discarding those which I have had no opportunity of tracing subsequently. Mr. Erichsen, I am glad to see, quite recognizes the stubborn nature of the affection. "Under any form of treatment," he says,[1] "the case will be slow, and long-continued perseverance in the use of remedies, local and constitutional, is imperatively necessary." To this accomplished surgeon, then, belongs the credit of having been the first who, from a professor's chair in England, has bodily dared to assail the prevalent method of noticing this affection, and to proclaim that its treatment is not such a short and simple matter as some teachers would have their hearers believe; a view of the case still more emphatically expressed by Herr Winternitz,[2] an author who has carefully studied the affection.

I must therefore entirely disagree with Professor Gross when he says,[3] speaking as I understand him of such cases, that they yield readily to treatment, meaning of course that they always yield readily. I have repeatedly tried every remedy he recommends, some of the medicines in much stronger doses, without any great success. The cures with atropia, which he quotes, by Stephanides and Nowatschek, of emissions occurring in a case of progressive muscular atrophy and commencing bulbar paralysis, are anything but convincing; the issue of the first is in flat conflict with my experience, the second would in all human probability have got perfectly well without a particle of atropia being administered. Hoffmann and Tissot in the last century knew better than this, for they pronounced emissions to be a most obstinate malady; and Dicenta and Moriggia come still nearer the mark when they say[4] that the treatment of this complaint is one of the hardest tasks which practical medicine offers, and that every means of cure which promise help must be grasped at.

4. Nor can this inveteracy be explained by delicacy of constitution,

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[1] The Science and Art of Surgery, 1872, vol. ii. p. 788.

[2] Berliner Klinische Wochenschrift, 1877, S. 401.

[3] Op. citat., p. 153.

[4] Deutsche Klinik, 1857, S. 179; Giornale della R. Acad. di Medicina di Torino, 1861.

peculiarity of bodily frame or nervous temperament, long neglect and presence of complications; for not merely does it present itself when none of these possible causes can be traced, but even when conditions the very reverse of these are visible. What is still more strange the disease will sometimes, when everything seems favorable to rapid and complete recovery, display almost preternatual obstinacy, resisting the most careful treatment for months or even years. In all I have seen eight of these cases, and I speak here of patients who gave treatment fair play in every respect. The first patient was a tall, muscular man, twenty-nine years old, a person of unusual resolution; he was circumcised without moving a muscle or uttering a word. After more than two years the emissions had only been reduced to about one in ten days in place of one a week, a farther improvement being two intervals of peace of about five weeks each. The patient then spent several months in travelling, with little benefit. The second case was that of a remarkably strong, square built man, twenty-seven years of age. At the end of two years there were still frequent outbreaks of two or three emissions a week. The patient now went abroad for a year, but came home little if any better, and the emissions got worse again directly after his return. After this the patient, quite tired out, left the country, but about two years after sent a message to say that he was quite well. Third case, patient twenty-six years old, ruddy but not very strong. At the end of two years emissions still continued at the rate of four to six a month, and at the end of three years one in every eight or ten days. Fourth patient, thirty-one years old, never very strong; at end of quite three years emissions still occurred every eight or ten days, with very occasionally an interval of twelve to eighteen days. Two long voyages effected no improvement. Fifth patient, a very powerful young fellow, living in the country, extremely fond of athletic sports. During the first eighteen months of treatment the case got almost constantly worse, the emissions increasing from an average of two a week, to ten or twelve and sometimes even sixteen or seventeen a month, forty-five occurring once in three months, and it took quite eighteen months more to reduce them to one in ten or twelve days. Sixth patient, twenty-six years old. Fourteen months elapsed before a decided reliable change for the better set in. Seventh patient twenty-four years old. At the end of a long course of treatment no improvement as regards the emissions; and threatening of paraplegia. Eighth patient nearly thirty-five years of age, strongly built, reporting himself extremely continent and temperate. At the end of two years had improved very little though most attentive to treatment. This patient positively affirmed that on one occasion he had quite sixty emissions in a month, and frequently fifteen in that time; and that it was no uncommon thing for him to have three in one night.

5. When the patient is resolute and under thirty-five years of age,

when the disease has not reached a great height, and has not induced structural change, I believe the case is always curable, sometimes even pretty easily, always supposing due attention is given to treatment; yet even under these conditions the disease will sometimes manifest intense obstinacy.

6. When patients have reached the age of thirty-five or thereabouts, when the emissions have continued for many years, when the intervals between them is never very long, when there seems a strong constitutional tendency to the disorder, shown by its being called into activity by a very slight cause, and when there is a great deal of constitutional or acquired weakness, particularly with a tendency to dyspepsia, neuralgia, and cerebral symptoms, I believe the cure will often tax all the resources of the surgeon and the resolution of the patient. Still, many of these persons recover; the patient mentioned farther on as taking four hundred minims of tincture of steel a day, who was forty years old and had suffered for many years, got quite well.

7. So long as there are even occasionally perfect erections and the emissions awaken the patient, there is every ground for hope, and little cause for alarm, if the patient will attend to the case.

8. In some depraved persons, who cannot be reclaimed from their habits of self-indulgence, or in whom structural change has been set up in the genito-urinary organs, the prognosis is serious.

9. Contrary to what might be supposed, I have seen no reason to believe that the presence of previous venereal infection, or even of stricture, materially influences the chances of cure; although an attack of syphilis or gonorrhœa, when the patient is under treatment, almost invariably brings on a relapse.

10. Treatment almost always does some good. The patient is usually better and never worse for the longest course of it, and for a system of continence and self denial. The belief that remedies which improve the health when taken for a short time do mischief when the use of them is kept up, is a belief equally contrary to reason and experience.

The late Mr. Acton seemed to have no misgivings at all about curing the complaint. There were no "ifs" in his doctrine. The prognosis was as unerringly favorable as the treatment was easy, and he appeared to meet with no refractory cases. "At a later stage," he says,[1] "when the disease has recurred so often as to impair the general health, or when the patient is naturally delicate, nutritious food, tonics, and sea air cure the complaint." And again, speaking of the serious cases,[2] "These patients get well under the repeated passage of instruments . . . . particularly when combined with astringent injections;" an opinion so

[1] Diseases of the Urinary and Generative Organs, 1851, p. 251.

[2] Ibid., p. 254.

flatly at variance with what I have seen, that it appears to me useless attempting to reconcile the discrepancy. My experience is, that "when the disease has recurred so often as to impair the general health," it is apt to give the surgeon a great deal of trouble; and that the remedies just mentioned frequently fail to cure it, I have ample means of knowing.

Dr. Druitt's prognosis is equally favorable. He says,[1] spermatorrhœa is readily brought within limits by treatment, and that he has cured many an inveterate case of imagined spermatorrhœa (under which head, as I understand him, he comprehends frequent emissions) and impotence by a few grain-doses of calomel, followed by combinations of quinine with Epsom salts, and afterwards by steel or zinc. This is one of the many things in medicine which I cannot comprehend. I have repeatedly tried Dr. Druitt's treatment and entirely failed to notice such results; I do not see any superiority in it over that which I have suggested. Had I not considered that I was justified by ample experience in ranking higher the system laid down in this work, I should have thought myself imperatively bound to recommend Dr. Druitt's in preference. My judgment as to the prognosis does not lead me to confirm this gentleman's views.

Occasionally a patient is surprised and alarmed at finding that all the signs of an emission, less only the pleasurable sensation caused by the expulsion of the semen, take place during sleep. I have known a man hurry to his surgeon in the greatest anxiety to know what this new state of matters portended. At one time I fancied it must be due to retention of the semen by spasmodic stricture of the urethra; but having found this canal perfectly free from obstruction in some of the cases I examined, and having satisfied myself that there was no subsequent passage of semen with the urine, I felt convinced there must be some other cause for the absence of sensation, and therefore watched the occurrence very carefully. After considerable observation I came to the conclusion, that in these cases there is really an incomplete effort of the system at an emission; but that the testicles, and possibly the seminal vesicles, having to some extent recovered from the weak and irritated state in which they had been, no longer responded so readily as before to the stimulus. I am therefore quite of opinion that this occurrence is a sign of improvement, and the patients themselves testify to the fact that it is not followed by the same exhaustion as an ordinary emission. That under other circumstances an incomplete emission may occur, is, I submit, shown by the fact that an ejaculation of semen, or what the patient supposes to be such, may take place after the removal of the testicles, as in the case quoted by Mr. Curling[2] from Sir Astley Cooper, where the emission ensued four days after the testicle had been taken away; as also in the case mentioned

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[1] The Surgeon's Vade Mecum, 1870, p. 629.

[2] Op. citat., p. 418.

by Mr. James Wilson[1] of a man who had both testicles removed, and where connection afterwards was "attended with the usual paroxysm and emission of some fluid."

Complications.—It now remains to examine a few symptoms for which surgeons are consulted by patients who suppose they are laboring under spermatorrhœa, and which also not unfrequently complicate this complaint itself. I propose to group them all together, and to begin with what seems to me the most important of them; thinking such a plan more practical and useful in a small work like this than any attempt to arrange them scientifically.

1. *Vesicular gleet.*—Often described as a passing of semen, and ranked by M. Lallemand as one form of diurnal pollution, is a discharge at stool of glairy, tenacious, generally opalescent, milky-looking mucus, almost certainly the contents of the seminal vesicles, with which is occasionally mixed a discharge of mucus from the prostate. It is not always due to masturbation, venereal excesses, or venereal diseases, though any one of the three may bring it on; in my own practice it has most frequently followed or accompanied seminal emissions. And if those writers who have ascribed it to gonorrhœa had, instead, assigned its origin in certain cases to bad treatment of this disorder, I should have felt quite disposed to agree with them; but I have seen so many cases of gonorrhœa which were not followed by anything of the kind that I must decide for this disease being only an occasional factor. The complaint, however, demands as much attention as if it were what M. Lallemand supposed it to be, especially as the patient's sufferings at times are anything but imaginary; for though a mere mechanical effect of constipation and an irritable state of the vesicles, though it rarely produces any debilitating effects when not anxiously noticed by the patient, yet no sooner do some persons see it than they jump at the conclusion that they are losing semen, and nothing can persuade them to the contrary. A man finding that there is written authority for this view is soon in a position to make himself truly miserable. In vain does the surgeon tell him that the disorder is a simple harmless affair; he may spare himself the trouble of giving any explanation of the matter.

A gentleman, eight-and-twenty years of age, whose constitution had been shattered by a residence in India, and who was under my care for this affection, gave me an account of his sufferings, which I was inclined to think exaggerated till he called on me one morning in a state of depression which quite justified all he said. He looked ill and prostrated to the last degree; his pulse was small, rapid, and thready. The night before he had had a discharge of this kind, followed by a slow oozing of

[1] Lectures on the Structure and Physiology of the Male Urinary and Genital Organs, 1821, p. 132.

grumous-looking fluid, almost like coffee-grounds, which continued several hours; some of the stains were visible enough on his linen. As I had carefully diagnosed the case, and had found nothing the matter with the bladder, urethra, prostate, or testicles, while there was very distinct evidence of vesicular gleet, I thought it most likely that his discharge came from the vesicles. In another case, where the patient, a healthy man, of very active habits, was rather prone to underrate the severity of his symptoms than to dwell upon them, his brother, a surgeon, told me that he had often seen him coming from the water-closet as pale as a ghost after one of these discharges. I suppose the sensation of passing this mucus had the same effect upon him that the sight of blood has upon some persons. In another person, a farmer, there was the same physical depression. Mental depression is not an uncommon result. I have had under my care more than one medical man suffering from this disorder, who, though quite aware it was harmless, could not throw off the disagreeable impression it produced.

As some authors evidently consider it proved that the function of these organs is to perfect and store up the semen, it will be proper to examine this part of the question before going farther. Many years ago Dr. John Davy made a series of observations on the contents and functions of the seminal vesicles,[1] and came to a different conclusion from Hunter, who contested the old doctrine that they are receptacles for the semen. He found the animalcules in the seminal vesicles after death, not always, it is true, but still frequently; sometimes, too, there were only fragments of them, and in others merely a few spermatozoa. He infers that the vesicles are not only recipients for the semen, but secreting organs also. This inference, he thinks, is supported by "the general resemblance in several cases of the fluid in the vasa deferentia and of the vesicles;" and yet in the very next paragraph (p. 12) he tells us that the fact of the vesicles being secreting organs is supported "by there being a certain difference in almost every case between the fluid of the vesicles and that of the vasa deferentia."

I must leave the supporters of Dr. Davy's opinion to explain this discrepancy; it goes beyond my powers to do so. One might imagine, from the way in which he speaks, that he had entirely overthrown Hunter's view, a view endorsed, I may remark, by so experienced a pathologist as Professor Henry Lee,[2] and had replaced the physiology of these parts on its ancient basis. But I do not see that he has established anything, and his descriptions are wanting in that completeness which would enable others to erect anything stable on them. He evidently wishes to show that the fluid in the vasa deferentia and that in the vesicles are identical;

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[1] Edinburgh Medical and Surgical Journal, 1838, vol. 1, p. 1.

[2] St. George's Hospital Reports, vol. vi. p. 28.

yet in many instances he does not specify what was found in the former with accuracy enough to give us a chance of forming an opinion. He controverts Hunter's statement that the fluid in the vesicles is brownish, though he often found it so himself.[1] This, however, he seems, so far as I understand him, to consider an after-death change in unhealthy persons, and to think that we should find a different state of health in criminals who had been executed; but he fails to tell us why this unhealthy change does not also take place in the identical fluid in the vasa deferentia. He appeals triumphantly to Meckel as having answered[2] Hunter's arguments; but I think, if the reader will take the trouble to go through the part of the work quoted from, he will find that Meckel has simply arrayed against Hunter, and others of his way of thinking, a series of reasons drawn almost entirely from anatomy, human and comparative, of a very inconclusive character, and unsupported by a single physiological or pathological observation of any value.

Dr. Davy solves briefly and clearly the problems as to how the surplus semen is disposed of. In healthy people the vesiculæ are partially emptied each day by the alvine evacuation, but the spermatozoa are always dead; so that he thinks the vesiculæ may serve as cloacæ, and that they are essentially designed for man "to enable him to control and exercise the moral check on the passions, by which he should be distinguished from brute animals." I am afraid Dr. Davy's reasonings is as faulty as his composition, and that is defective enough. Man does not generally "control a check;" and if the vesicles are designed to serve any such purpose in him, it is difficult to understand why we find them, and according to Dr. Davy containing spermatozoa, in the ram and bull, "brute animals" which are generally understood not to put much "moral check" on their passions.

The check too, seems to be of the weakest. Dr. Davy, indeed, found spermatozoa in the fluid; and a surgeon upon whom I could quite depend, and who suffered a great deal from these emissions, told me that he had occasionally found a few dead spermatozoa in the discharge. Dr. Kirkes says:[3] "The fluid-like mucus, also, which is often discharged from the vesiculæ in straining during defecation, commonly contains seminal filaments;" Dr. Griffith, also, in a case related by Mr. Acton, found spermatozoa in the fluid passed after straining; while several passages to the same effect will be found in Professor Gross's able and exhaustive work, the writings of Herr Fürbringer,[4] and others. I have myself found them, have even in some cases noticed a rather copious admixture

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[1] Op. citat., pp. 2, 3, 5, 6, 7, 8, 10.

[2] Manuel de l'Anatomie Générale, 1825, tome iii. p. 642.

[3] Handbook of Physiology, 1867, p. 965.

[4] Volkmann's Sammlung klinischer Vorträge, H. 207, S. 1836.

of them; but equally there is evidence enough to show that we cannot count with certainty upon meeting with these bodies. I have repeatedly observed complete absence of them, and Professor Humphry says,[1] "he has examined this fluid passed by several persons, and never found any spermal elements in it." Other observers have noticed the same thing. Curschmann and Fürbringer, who have so carefully studied the morbid states of these organs, flatly refuse to admit that with the pressure ordinarily exerted the semen is regularly emptied out every day in healthy persons; that is to say, they reject Dr. Davy's view, and Surgeon-General Dr. Hammond, to whose courtesy I am deeply indebted, says,[2] that in his opinion, "not one case in a hundred of alleged escape of semen during defecation or urination is in reality an instance of such an event." Comparing, then, the general result with the bulk of a stain caused by an emission of semen, and calling to mind that strong healthy men often have connection quite six or eight times a week, in each of which I suppose fifty times as much semen is lost as in the daily passage from the vesicles, the existence of such a controlling power becomes simply incredible.

Supposing Dr. Davy's view, that the spermatozoa are expelled daily in a lifeless state, should prove on inquiry to be right, the animalcules must be killed while in the vesicles—a fact which seems to me fatal to the idea laid down by Messrs. Kirkes and Paget of these bodies being perfected there. These gentlemen say[3] that the semen is stored up in the vesicles in order that the development of the spermatozoa may be effected, as they hold that it is not achieved till the semen has lain "some time" in the vesicles. Then the perfecting of the spermatozoa can have little to do with impregnation, as I believe it has several times happened that a man, in overcoming the resistance to his wishes offered by a female, has had an emission, and yet has, in a second more successful attempt, impregnated her within a few hours after; and the spermatozoa in a second ejaculation taking place the same night, though much less numerous than in the first, seemed quite as well formed. Again Messrs. Kirkes and Paget, visibly substituting conjecture for evidence, hold[4] that the semen is probably continuously secreted and passes away with the urine, or is ejected from the urethra in the act of defecation. But in this case the spermatozoa must be broken up so as to be no longer recognizable, or we should always find them in robust, healthy young men, which is not the case even after straining; and the process must be very rapid to enable the frame to get rid of the almost daily superabundance of semen. The utmost severity of this gleet, too, seems to have no effect

[1] Holmes's System of Surgery, vol. iv. p. 607.
[2] Sexual Impotence in the Male, 1883, p. 139.
[3] Handbook of Physiology, 1848, p. 611.
[4] Handbook of Physiology. By W. S. Kirkes, M.D., 1867, p. 693.

on the impregnating power of the seminal fluid; of this I think there can be no doubt, and Fürbringer says[1] that in two men, who had for years suffered from these discharges at stool, the fertilizing elements were in no way different from those of healthy semen either as to number, bulk, shape, or completeness. And for what purpose could the semen be stored up in the vesicles, when we know, by the fact of seminal emission being sometimes tinged with blood in patients laboring under orchitis, that the testicles are also emptied during the act. The probability is that the perfecting power of the spermatozoa resides purely in themselves, and is influenced solely by the amount of semen thrown off, there being a good deal of evidence to show that they gain materially in size during continence, adding quite one-third or more to their usual bulk; whereas when emissions become frequent they are often small, feeble, and broken. Also it seems clear that they possess the power, either of imbibing nutriment from the fluid of the cavity they may be in, and thus acquiring material from which to propagate other spermatozoa; or else of converting such material into bodies like themselves, seeing that they have been found in the secretion of hydrocele by Liston,[2] Lloyd,[3] and Dalrymple.[4] Mr. Lloyd reported them as full-sized, highly vigorous, and present in vast numbers; and in Mr. Liston's case they were in incalculable quantities.

The evidence on the other side is overwhelming. Long after the testicles have ceased to secrete, the vesicles continue to fill as usual, and are now and then emptied by the pressure of a hard stool. M. Duplay found[5] the seminal vesicles distended as in the prime of life at quite eighty years of age, although in some instances they were more flattened and relaxed than natural; whereas he continually noticed wasting and loss of weight of the testicles after sixty years of age. Cabrol saw these bodies as full of semen as those of any man he "had ever anatomized" in a person who had no testicles either externally or internally. I examined the body of a pauper eighty-four years old, who had died in St. Luke's workhouse, then under the charge of Mr. Courtenay, of Finsbury, since dead. The seminal vesicles were as full of fluid as in a young person, but the testicles at this advanced age must have long ceased to produce semen.

Dr. Black opposes this statement.[6] He says it is unwarrantable, because Casper relates the case of a man aged ninety-six who died under the care of a trustworthy observer, Dr. Abel, who had the remarkable

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[1] Volkmann's Sammlung, S. 1845.

[2] Medico-Chirurgical Transactions, vol. xxvi. p. 216.

[3] Ibid., p. 368.

[4] Ibid., vol. xxvii. p. 18.

[5] Archives Générales de Médecine, 5me Series, tome vi. pp. 129, 428.

[6] Op. citat., p. 168.

opportunity of observing a number of spermatozoa in the vesicles. To complete the argument, he adduces, also from Casper, the case of a man of sixty-five who had numerous zoosperms in his vesicles; of an invalid aged sixty-eight who was in the same satisfactory condition, and that of a man sixty years old whose secretion also showed zoosperms. Farther on[1] Dr. Black says, "If more ancient authority can be relied upon, Pliny relates that Massinissa had a son born to him after he was eighty-six years of age; Savonarola asserts that Nicholas de Pelavicinis had a son in his hundredth year: Alexander Benedictus knew a German who had one in his ninetieth year; and Longinus mentions another who at the age of a hundred married a woman of thirty, by whom he had a numerous offspring (!) . . . Dr. M——, of P——, has just informed me to-day (Aug. 9, 1871), that his grand uncle, Captain ——, married at the age of ninety-six, that he lived for ten years afterwards, and had a family of four by his wife. And Old Parr possessed sexual capacity at one hundred and forty!"

Had Dr. Black confined himself to pointing out that I had no proof, in the case quoted, of this particular patient's inability to procreate, he would have had some ground to go upon, for in fact I never examined this part of the question. I took the ordinary rule of life as my standard, and have every reason to believe that it did not deceive me; and that in the great majority of cases the testicles have, at the age of eighty-four, "long ceased to produce semen;" that is to say, to fill regularly with properly-constituted fluid. Like most men, I have heard of instances where persons had procreated at a still later age, and put about as much faith in them as most men do. Dr. Black having imported quite a different element into the question, I proceed to examine it. As to Casper's first case there is an easy answer. It is always much more probable that an observer deceived himself, or was deceived, than that a very, very unusual event occurred. When we know how often stories about extraordinary longevity have collapsed; when we read in quite recent times of an autopsy on the body of a centenarian, who turned out to be eighty-four years of age; and of a British officer receiving the congratulations of his friends on his attaining his hundred and fourth year, when it subsequently transpired that there never was any such name on the Army List, we are apt to grow sceptical. The cases at sixty-eight, sixty-five, and sixty have nothing to do with the state of a man at eighty-four; they are altogether irrelevant. With regard to the instances mentioned by Benedictus and others, I grieve at having to throw even a shade of suspicion on the testimony of such respectable ancients, but I confess to an utter disbelief in them; not that they are pure fabrications perhaps, though I strongly suspect that this comes very near the mark, but that

[1] Ibid., p. 174.

there is too much exaggeration and credulity in the whole affair. The story told by Dr. M——, who figures at 1871, among "more ancient authorities," I place in the same category. I want a little more evidence before believing that any man lived to be a hundred and six years old. Finally, I look upon Old Parr as an utter impostor, who traded on the credulity of mankind; when alive on earth he found people of easy faith, and his ghost might find them now.

M. Dieu gave a very different account.[1] He found that the spermatozoa entirely disappear at the age of eighty-six. Nothing can be more express than the terms in which he tells us this.[2] Mr. Curling, an excellent observer, and one who has paid great attention to these subjects, only once saw them as late as eighty-seven.[3] M. Dieu gives the results of 105 autopsies, which form valuable materials for estimating the rapid and steady decay of the secretion as man approaches the epoch of natural impotence. While in 49 persons who had passed the age of seventy he found spermatozoa absent in 27, he found them wanting in 28 out of 38 cases in octogenarians. True, M. Dieu thinks men might fecundate up to the age of eighty-six, but he puts this forward merely as a supposition founded on the occasional presence of spermatozoa in the vesicles after death. The 105 *post-mortem* examinations embraced ages from sixty-four to ninety-seven. He found no spermatozoa in 64 of these, 4 of whom were nonagenarians. Of the remaining 41, 14 showed spermatozoa more or less truncated. There is no mention of absence of the usual fluid in the seminal vesicles, though in some instances it had undergone peculiar changes.

So far as regards the natural secretion of the vesicles, that seems to be unaffected by arrest of the influx of semen from the testicles, for they secrete in persons who have been castrated, and M. Gosselin found the seminal vesicle full when the cauda epididymis of the corresponding side was quite obliterated; and Hunter on several occasions met with the same state when the corresponding testicle had been removed. When one testicle is lost, the corresponding vesicle suffers no atrophy. Now, were their function to receive semen, what we know of the physiology of similar structures would teach us to believe that they would waste so soon as they were no longer required, or rather, exercised. There is nothing in their structure to forbid this; on the contrary, they belong to that class of organs most likely to contract upon themselves when not periodically expanded.

Hunter, speaking of the generally received view (that the secretion thrown off at stool is semen), remarks that it is not of the same color, and that it attacks those who have just had an emission of semen. A

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[1] Journal de l'Anatomie et de la Physiologie, 1867. [2] P. 452.
[3] Op. citat., p. 402.

man not given to any excesses may have a discharge of this kind and connection shortly after. We are told by Lallemand, Meckel, and others that it has the peculiar smell of semen, but this statement has been controverted on very good authority. Mr. James Wilson, in his lectures delivered before the College of Surgeons, says,[1] "In smell it does not resemble semen;" and Hunter, in examining the fluid in the vesicles of two men, one of whom had been killed by a cannon-ball and the other by a fall, also found that it had not the smell of semen. Both these distinguished surgeons clearly refer to the odor of the seminal fluid when ejaculated; but I believe this is due to the admixture of other secretions, as that of the testicles merely does not seem to possess any,[2] a fact, I believe, first noticed by Leuckart.[3] Indeed, Fürbringer maintains that the smell is derived from the prostatic fluid, and that it is an unerring sign of the presence of this secretion. The "sympexions" found by Terrillon[4] in healthy semen, flat refracting plates with rounded edges, of which, however, I have no knowledge, ought to offer a satisfactory test. Lastly, an expulsion of this mucus produces no ejaculatory sensation when passing along the urethra, as always occurs in those rare instances when a real emission happens at stool. All that the patient is aware of is that a bulky body is traversing the canal.

The theory has been put forward that the seminal vesicles contain semen, and are the principal organs affected in spermatorrhœa, on the ground that seminal emissions occur after castration; but the facts observed prove the very reverse, for in castrated persons, though erotic dreams may appear with a discharge from the vesicles and prostate, yet the patients become every month more insensible to their occurrence, while they steadily decline in number from the want of the presiding organ. In those deprived of the testicles in early life there is often a considerable amount of desire, but they never feel the sensation of connection, any more than a man born blind ever enjoys the sense of sight, though he may desire to see as much as other people. And if emissions of this imperfect kind occur after castration, what does the fact prove? Simply that the subordinate parts continue to act after the essential organ is removed, much as they did while it remained *in situ*. "The question," says Mr. Curling,[5] "has been raised, and was at one time much discussed in Germany, whether a person castrated after arriving at the age of puberty, may not retain the power of procreating for a certain period afterwards." It appears to me that much discussion on such a point was sheer waste of time, and that one or two observations by a prac-

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[1] Op. citat. p. 121.

[2] Kölliker. Handbuch der Geweblehre des Menschen, 1852, S. 497.

[3] Handbuch der Physiologie: Von Rudolph Wagner, 1853, B. iv. S. 819.

[4] Annales der Dermatologie. 2e Serie, tome i. p. 440.

[5] Op. citat., p. 418.

tical specialist would have settled it. There is no authentic evidence, of which I know anything, that can really be held to prove that impregnation ever occurred after ablation. If it could even be supposed that the seminal vesicles contain sufficient fertilizing fluid for one impregnation, it is pretty certain that that one emission would effectually and for ever empty the receptacles; and an examination with the microscope of the fluid thrown out by this emission would decide whether it contained sufficient living spermatozoa to admit of its fertilizing the female, which I am disposed to think would not be the case. Future examination would, I think, show a growing or entire absence of spermatozoa, and under such circumstances any evidence about paternity might safely be rejected. Mr. Lee, as I understand him, considers that the mucus escapes in this form of gleet from the circular fibres at the orifices of the vesicles losing their power, so that the cysts cannot resist pressure. "This want of tone may," according to him, "result from over excitement, from weakness, from old age, or actual disease."

Professor Gross gives[1] here a rule of diagnosis which is rather embarrassing. When the patient is suffering from night emissions, the discharge spoken of in the foregoing paragraph as vesicular gleet comes from the prostate; if there be day pollutions also, this and the flocculent sediment in the urine represent semen. I have seen no reason to believe that any such trenchant line of demarcation exists. The discharge may contain semen when the patient has never in his life had a day emission; prostatic fluid certainly, in some cases at least, accompanies it in persons suffering from day emissions. For reasons given in the section on affections of the prostate, I consider that too important a part is assigned here to this gland by some observers. Until the patient has reached mature age at least, it does not, unless he has suffered under neglected or badly-treated gonorrhœa, contribute materially to the bulk of the secretion; and it may be considerably enlarged and diseased in later life without the patient complaining much of this form of gleet.

At one time it was believed that in continent men the semen is absorbed and adds force to the frame, communicating in the long run quite a seminal odor to it. This doctrine, substantially the creed of the athletes of Greece and Rome, was taught with all that prestige of infallibility which has so often distinguished medical theories. According to a quotation by Kaula[2] from Baglivi, the latter never had the least doubt in his own mind that such was the case. However, I suppose it is now admitted that there is not a particle of foundation for such a belief, that there is no proof of the absorption of semen, that the earlier writers mistook the effects of abstinence from excess for those of continence, that the latter, like training, is a state which cannot be permanently enforced with any hope

[1] Op. citat., p. 151.

[2] Op. citat., p. 46.

of lasting benefit, and that men enjoying intercourse in moderation are as strong and healthy as anchorites and eunuchs. But I see no reason to believe that the voluntary adoption of it ever yet did harm. The opinion, as old at least as the days of Galen, that retention of the semen gives rise to epilepsy seems to me entirely unfounded; and I consider that Gaubius, when he said that such an event must at least be very rare, and that marriage was not a remedy, knew more about the matter than many famous men both before and after him.

2. *Imperceptible Passage of Semen.*—Excluding cases in which the semen is passed by erection and jactitation (involuntary emission), and those in which it is expelled after straining (vesicular gleet), we have remaining only one form—that of imperceptible expulsion of it into the bladder, from whence it is extruded with the urine—a disorder of which we hear a great deal and see very little, since few, very few, instances have occurred in which this took place to an infinitesimal amount; and I was surprised to hear Mr. De Meric, in the discussion on Mr. Gascoyen's paper previously alluded to, speak of this symptom as a disorder. I do not of course deny that semen thus passed is occasionally met with, and that in persons who have given way to great excesses, we may find a very small quantity of it; but in a shape of sufficient severity to do mischief no human eye has yet seen it, or probably ever will. Mr. Gascoyen has never witnessed [1] such an affection, and very properly doubts its existence. For all these reasons I feel myself quite justified in passing it over very cursorily here, and relegating it to the section on urinary deposits, where the reader will find what I have got to say under the head of "Spermatozoa in the Urine."

3. *Cystorrhœa.*—Though a rare result or accompaniment of spermatorrhœa, yet I have seen a slight degree of this affection complicate the other in a few instances; and in some persons I have seen a discharge, after making water, of thin yellow mucus, which passed along the urethra, quite different from the mucus of the vesicles. This form of disorder has not been accompanied by any painful symptoms. It is not dangerous either, but it exerts a very depressing influence upon the patient's mind, and is generally found associated with a low state of health. It is not in any way necessarily connected with either gleet or gonorrhœa.

The worst case I ever saw was that of a patient under the care of Mr. McDougall, the translator of M. Lallemand's work. He was in shattered health, and had never been strong. He suffered from a most severe retractile stricture, and appeared to be slowly sinking under the irritation caused by it. His face was blanched, and had a singularly care-worn look. He did not expect to be cured, as Mr. McDougall, in whom he had great confidence, had given a very unfavorable opinion of his case.

[1] British Medical Journal, 1872, vol. i. p. 67.

This patient two or three times, when consulting me, withdrew to the water-closet, taking with him a cup of gutta-percha tissue for the penis, and brought it back with quite half a wineglass of thin yellow mucus in it, passed after emptying the bladder; it seemed to be a simple homogeneous fluid. At one time I thought this might have been fluid from the seminal vesicles, but from observation of other cases I have long since come to the conclusion that a flow of this kind is simply one of mucus from the bladder, following purely on micturition, quite distinct from that of vesicular gleet and appearing much less frequently than the other, so that there need not be any great difficulty about the diagnosis. I have once again seen the secretion from the vesicles of the same color as in the instance given above, and accompanied by much larger show than usual of spermatozoa, the case being a very bad one though in a young subject, complicated with rather advanced weakness of the lower extremities pointing to paralysis, and attended by deep-seated neuralgic pains. I believe there is only another example extant of the vesicular fluid being colored in this way, that mentioned [3] by M. Dieu; though Fürbringer on one occasion found [2] the contents of the seminal vesicles stuffed with yellowish stiff jelly without almost any cell material. The hue here may be owing to some previous inflammation, at any rate Terrillon says that the ejaculated fluid in acute double gonorrhœal epididymitis is of a yellowish tint verging on green, due he suggests [1] to the presence of leucocytes, and that in one case emission of this yellowish semen continued for six years after the inflammation had ceased. In none of the other cases were the symptoms anything like so severe as in those two I have mentioned. Pain at the neck of the bladder after an emission sometimes complicates spermatorrhœa; it seldom requires any treatment unless it disquiets the patient's mind, when it can always be met by blistering and sedatives.

4. *Affections of the Prostate* constitute another of the imaginary evils with which many of these patients torment themselves. There can be no doubt that they are anything but imaginary in many persons who have passed the meridian of life; but as a sequel of spermatorrhœa in young people they must be extremely rare, as I have only very seldom seen such a complication. As, however, a good deal of importance is attached to the question, a few remarks on it may not be out of place.

The secretion from the prostate, when procured from the living person, by means of pressure of the gland,[4] and therefore not mixed up with other secretions, is thin, very slightly tinged with a milky hue and mostly of acid reaction. Under the microscope it shows gland epithelium, sometimes arranged as described by Langerhaus, that is to say cylindrical cells, which, with their prolongations, fit into a mosaic of small round epithe-

[1] Op. citat. p. 460. [2] Op. citat. p. 447.
[3] Zeitschrift für klinische Medicin, B. iii. S. 301.
[4] Volkmann's Sammlung, S. 1849.

lial bodies; amyloids of all sizes; flakes and balls in a state of colloid and amyloid degeneration, and moderately refracting "corns" or "grains," about half the size of blood corpuscles, which are the cause of the milkiness. These amyloids are not restricted to the prostate, but the grains are, and indeed are pathognomonic. When the prostate is inflamed this fluid becomes thickened and the microscope reveals pus-cells; it is also said, on drying, to display crystals of ammonio-magnesian phosphate. In the healthy state it is probably destroyed in imperceptible quantities and thrown off, as Fürbringer easily obtained it by pressure, and yet there may be no visible expulsion of it for years.

In many persons, who have long suffered from emissions or have had gonorrhœa, or who have given way to masturbation, as also in advancing life when none of these causes have been at work, the secretion from the gland becomes more active, and it is often expelled at stool in the shape of one or two drops of thick milky fluid rather like mucilage, most frequently when the bowels are sluggish and demand an effort for the due expulsion of the fæces. Sometimes, but far less frequently in spermatorrhœa, it passes even with a liquid stool after the last drops of urine or with them. With this occasional prostatorrhœa, however, some authors seem to have entirely confounded prostatic gleet, appearing in the mouth of the urethra, especially in the morning, which I have never seen except as a sequel of gonorrhœa. Mr. Adams says[1] the escape of this fluid is attended with a pleasurable feeling of titillation, of which I have never heard from patients. He gives, as occasional local complications of it, frequent and urgent desire to relieve the bladder, scalding, generally referred to end of penis, pain in pelvis shooting through hips and down thighs; to which another author has added slight bleeding, pain on emissions, sense of weight and fullness in rectum after stool, and dull pain in perineum; the first four of which I have never seen complicate either of the two first forms unless preceded by gonorrhœa. Professor Gross, however, taking all these as one affection, out of sixteen cases of it traced eleven to masturbation and one to this and sexual excesses; and Fürbringer, as I understand him, which is not over and above well, long previously maintained[2] the same view. In spermatorrhœa prostatic affection is generally mixed with that of the vesicles, a slight escape of semen accompanying both, but a considerable degree of the first, derived from other sources, may be entirely unaccompanied by the presence of spermatozoa. Dr. Ledwich reports[3] a case of this absence in prostatitis brought on apparently by hard riding, accompanied by great irritability of the bladder and discharge of mucus after making water.

I have never in the worst cases of spermatorrhœa, when uncompli-

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[1] Op. citat. 1853, p. 50. [2] Volkman's Sammlung, S. 1844.
[3] Dublin Quarterly Journal of Medical Science, vol. xxiv. p. 35.

cated, seen anything approaching the acute prostatitis sometimes brought on by gonorrhœa; neither have I ever seen, as a result of emissions or masturbation, anything like the enlargement of the gland which we meet with in elderly persons. Sometimes after a hard stool there is in spermatorrhœa a slow draining of mucus from the urethra, a symptom which often makes patients very uneasy. As under such circumstances the prostate is often fairly normal, such a large quantity of mucus could not be thrown off from it, and my experience is that any secretion from Cowper's glands is almost invariably washed out with the first few tablespoonfuls of urine. Consequently I am disposed to think that the great bulk of fluid comes from the neck of the bladder and prostatic part of the urethra, particularly as some of these patients complain so much of this part feeling stuffed at such times. I have traced this symptom to a gonorrhœa, a cold, masturbation and to a combination of these factors.

Many persons have credited the prostate with being the chief source of vesicular gleet. Professor Humphry is of this opinion.[1] The quantity of fluid is, however, much larger than would be thrown off by this gland unless it were enlarged, and in young persons this is very rarely the case, in the middle-aged not very frequently, unless there is a history of gonorrhœa. That it furnishes a small contribution to the bulk of vesicular gleet is probable, almost certain; indeed Fürbringer says this is shown by the smell often spoken of as peculiar to semen, and the presence of the Böttcher crystals, due[2] to the combination of an organic basis yielded by the prostate with the phosphoric acid derived from the semen, a fact stated to have been first observed by Schreiner. He maintains[3] that Ulzmann is quite wrong in regarding these crystals as a component of the fluid of the seminal vesicles; equally wrong in asserting that the more of these crystals the worse the character of the semen. His (Fürbringer's) view, as to the origin of the seminal odor, is supported by a fact for which some authors have vouched, that it continues when the semen has been almost entirely robbed of its proper constituents and reduced nearly to the fluidity of water. The milky hue of this (the vesicular) secretion is, however, due to admixture of the small quantity of prostatic secretion.

5. *Urethral mucous Gleet.*—Another of those affections which occasion some nervous patients extreme anxiety is a discharge of mucus after erections. Some writers, Fürbringer among the number,[4] ascribe the flow to Cowper's glands. The fact seems of the most doubtful nature. These bodies and their ducts are often chronically inflamed in gleet without anything of the kind happening; in spermatorrhœa the urethra is often red, tender and bedewed with mucus. I am therefore disposed to look upon the crypts and follicles of this canal as the chief sources. Cer-

[1] Holmes's System of Surgery, vol. iv. p. 607.
[2] Zeitschrift für klinische Medicin, B. iii. S. 307.
[3] Ibid. S. 311. [4] Ibid. S. 303.

tainly it is not semen, as we find no spermatozoa in it, or only by some rare chance a very small number. Delicate, sensitive men, however, remembering the follies of boyhood, set it down at once as spermatorrhœa; and the surgeon must either treat it in earnest or make up his mind to find the patient thoroughly disappointed and dissatisfied. It is of no use to explain or reason here, to tell the patient that he really only notices the discharge because he sees everything through the medium of his fears, because he is always worrying himself about his malady; that he has had all his life, and always will have, a secretion of mucus after powerful erections, and that such a discharge is common to every son of Adam, though, perhaps, more abundant in relaxed than in high health. It is all in vain—the surgeon will find him utterly incredulous; some one has told him, or he has read in some book, that semen is discharged in this way and this is quite enough. Stories to this effect are constantly related by the earlier writers, and have left their stamp on current views about spermatorrhœa, although they were perfectly unfounded. The escape of semen in a case of advanced spermatorrhœa, mentioned by Ste. Marie, which was at once induced by anything "exciting to venery," causing no other sensation than that of a warm liquid passing along the canal, was almost certainly only a discharge of this fluid. For my part I long ago abandoned all attempts to persuade the patient that his alarm was groundless. I saw argument was useless, and now always apply myself to the cure of the principal affection without disputing the point, and, happily, as the patient improves in health, he usually takes a less morbid view of such petty matters. As, however, mild injections never do any harm in these cases, and are often serviceable in relieving the weak and irritable state of the urethra, besides quieting the mind of the patient, I see no objection to their use; and in the section on treatment the reader will find what I hope are sufficiently full directions for the employment of this remedy.

In other cases, discharges of this kind occur without an approach to an erection, usually in men who are engaged, from such slight causes as writing or even signalling to the young lady, acts often unaccompanied by any improper thoughts; patients sometimes report the mucus as issuing in complete gushes, and so disturbing them as to unfit them for work of any kind; harassing them with fears of coming impotence and rendering them deaf to all well-meant advice, for really the symptom in question has no significance. In others again these discharges happen at night, and are described by the patient as real seminal emissions. The principal symptom is a number of small, dirty, pale stains on the linen, without any erotic dreams. I have seen cases in which copaiba had been given, under the supposition that these patients were suffering from gleet; such treatment being wholly unnecessary, as every complication of this kind disappears with improvement of the health.

In some rare cases there is a copious discharge of mucus mixed with

a certain amount of pus, which looks very much like the discharge in gleet after gonorrhœa, only that it is present in greater quantity, more like the amount thrown off by women in the declining state of leucorrhœa. It appears to come from the whole of the urethra in some persons, as I have found this canal tender all the way along. In four instances I have seen it accompanied by balanitis of the same kind. The first patient had two or three attacks while under my care, and had had several previously; he knew when one was coming on, and having observed the premonitory symptoms, promised to call and show me the discharge in full bloom, and kept his word. There was not the slightest reason to suspect any venereal affection in this case; and, strange to say, though the inflammation of the urethra and prepuce was so extensive and evident, the emissions were not severe. This strange form of discharge yielded easily to injections of nitrate of silver. I have had three more cases since then; in two the irritation seemed principally due to a very long prepuce, the opening of which was extremely narrow. Both patients assured me that they had never attempted connection.

6. *Irritable Urethra.*—Of this there are two kinds widely distinct from each other. One is marked by extreme sensitiveness of the canal. On passing a bougie, even with the greatest gentleness, the patient shrinks and complains almost as much as if he were having this done while suffering from acute gonorrhœa. I have seen an unusually powerful and healthy man unable to endure the irritation of a soft bougie three inches down the passage. This state is often accompanied by weeping of mucus, in which inflammation corpuscles are found; on opening the lips of the urethra the surface is seen pink or red, and bedewed with moisture much as though a gonorrhœa were beginning. This symptom may be a result of masturbation, but I have seen it in patients who assured me that they had given up the practice for years; it seems to me a purely inflammatory affection, rarely running on however to the formation of pus. The second form appears to be of nervous origin. The urethra looks perfectly healthy, and when a bougie is passed there may be no unusual sensitiveness, but the patient is tormented by a sensation as if a worm were creeping along the canal. Again, he feels as if a little fluid were oozing from the urethra, but on looking he sees nothing of the kind; or there may be a sense of trickling, itching, or crawling. Some patients complain of excessive sensitiveness in the urethra near the glans; others cannot define or realize tl e uneasiness though they suffer quite as severely. Patients often speak of these symptoms as far worse to bear than any pain. I am disposed to class along with them the perspiration of the scrotum, the coldness of the penis and scrotum, and an annoying pain in the epididymis complained of by some persons. They all look very like nervous symptoms dependent on disordered health. Occasionally a patient will complain of great irritability of the bladder and kidneys, a quantity of water

being passed as often as every ten minutes; a state sometimes preceded by headache lasting from six to twelve hours.

7. *Stricture.* 8. *Irritable State of Foreskin.* 9. *Coldness of Penis and Scrotum.*—These complications are grouped together here, not on account of any affinity in function, structure, or disorder, but because what I have to say about them is so strictly limited to their treatment, that it seemed better to refer them to that section. No doubt in a systematic work it would have been quite right to take them here; but as this is not a systematic work it would be worse than waste of time to do so. It may be as well to state, that there are also some complications spoken of in the chapter on treatment which do not figure here at all.

10. *Varicocele.*—In my opinion an unnecessary amount of importance has been attributed to this complication; I entirely side with those who consider that its influence with respect either to emissions or impotence has been completely overrated. I have seen cases where it had been sedulously attended to without the slightest beneficial effect upon either, and have repeatedly set both right without paying the least attention to the affection of the veins. Professor Gross expresses[1] the same view as was maintained in long earlier editions of this work; he sees "no causal relation" between the varicocele and spermatorrhœa, and Sir James Paget, who is fully entitled to be considered an authority on such a point, does not believe[2] that varicocele ever produced either wasting of the testicles or impotence; my experience is certainly to the same effect. Mr. Curling, however, says[3] that varicocele tends gradually to impair the nutrition and diminish the secreting powers of the testicles; and there can be no doubt that morally looked at its effect is very bad, and that many patients very unnecessarily make themselves miserable about this matter. Mr. McDougall says that in the severer cases nearly one-third of his spermatorrhœa patients were suffering from varicocele, and a certain amount of it is by no means uncommon in these patients; but whether this proportion is greater than in persons free from spermatorrhœa we have yet to learn.

11. *Urinary Deposits.*—Perhaps after the idea that semen is imperceptibly draining away from his system, the most fertile source of misery for an anxious, desponding patient of this class is the conviction that he has got something the matter with his urine. Most men are sensible enough to rest satisfied with the assurance that there is no state of this fluid peculiar to spermatorrhœa, that there is not the least necessity for the surgeon to be continually examining specimens; and that all the forms of deposit, which they are most likely to be suffering from, will pass away as the health improves. But there are some few persons who, unfortunately for themselves, are more easily silenced than convinced by

[1] Op. citat. p. 156. [2] Op. citat. p. 281. [3] Op. citat. p. 413.

the answers given to their questions. A patient of this kind not unfrequently acquires a morbid habit of watching every change in his urine, and treasuring up every scrap of mucus or epithelium he may see in it for inspection under the microscope. It is useless to tell such a person that there is nothing the matter with him. The conclusion he arrives at is, not that there is an honest desire to save him needless expense and misery, but that his medical attendant is afraid to tell him the whole truth; and when he has received the same account of his case from a second or a third, he falls back upon the impregnable position, that the precious material is escaping in quantities too small for the microscope to detect, and that his health is being ruined by an invisible process of deterioration. As, however, the state of the urine will sometimes require a certain amount of special attention, I proceed to offer a few practical remarks on the diagnosis and importance of certain urinary deposits.

Diagnosis of Urinary Deposits.—In severe cases of emissions, attended with exhaustion, dyspepsia, rheumatism, cystitis, or stricture, or any combination of these, the surgeon will find the deposits most usually met with when such complications are present without spermatorrhœa, and he will meet with no others, unless it be now and then a few stray spermatozoa. I do not in any way gainsay the observations of other writers when I state, that my own are distinctly adverse to the existence of any pathognomonic sign of spermatorrhœal urine. Still every person who investigates this fluid will frequently meet with urates, uric acid, phosphates, oxalate of lime, epithelium, mucus and pus. I at once admit that the observations on which the above-given conclusions are founded, were limited to a search for the most usual constituents of disturbed urine; indeed, I need scarcely say, that no person busily engaged in practice could submit the urine of many patients to anything deserving the name of analysis, considering that a proper examination of a single specimen demands that at least thirty processes should be gone through. Consequently I wish to be understood as saying, not that no other disturbing elements were ever present, but that the deposits spoken of were those usually met with, and that only simple means were employed to detect them. At one period I spent, or rather, I may say, wasted a great deal of time and money in more elaborate observations; but as I found nothing that repaid the search, or that served in any way to throw light on the pathology of the disorder or its complications, I gradually abandoned the experiment. For the convenience of the reader I give a brief summary, embracing the most marked characteristics of the deposits and the tests commonly employed.

Phosphates.—Deposit white, sometimes ropy. Insoluble by heat and in solution of ammonia or liquor potassæ. Soluble in acetic acid and dilute hydrochloric acid. Wholly or partially dissolved by nitric acid. Urine generally nearly or quite neutral, or even alkaline, but may be

acid. Of high specific gravity, varying in color from pale to deep brown; not unfrequently contains also mucus, and according to some authorities, sometimes blood; latter constituent not seen by myself in spermatorrhœa cases; often covered with an iridescent pellicle. White amorphous deposit, not acted on by liquor potassæ, indicates phosphate of lime. When the deposit is visibly crystalline, it is either neutral triple phosphate, or bibasic triple (alkaline) phosphate. In the former the crystals are prismatic or penniform; in the latter, radiated or foliaceous. Frequently preceded by great wear and tear of the system, injuries, etc. Accompanied, especially when the phosphate of lime is absent and the urine is of a deep amber hue, by dyspepsia, restlessness, irritability, mal-assimilation, and great loss of strength. *Carbonate of Lime.*—Occurs with phosphatic deposits. Deposit visibly crystalline. Crystals radiated, foliaceous, or dumb-bell shaped. Insoluble in ammonia. Soluble in acetic acid, with effervescence. *Oxalate of Lime.*—Deposit white; visibly crystalline. Insoluble by heat and in potass, ammonia, and acetic acid. Dissolves without effervescence on addition of nitric acid. Crystals octahedral. When dumb-bell shaped, with the same characters, oxalurate of lime is present. Urine often darker than in health, sometimes contains excess of urea or epithelial cells; generally of high specific gravity, as from 1.025 to 1.030. Often accompanied by great depression, physical and mental, wasting, nervousness, loss of energy, dry state of skin, and dark unhealthy complexion. A tendency to boils and carbuncles, as also to scaly eruptions, is said[1] to accompany it, but I have not been able to confirm this. Irritability of the bladder and great tenderness of the urethra are not unfrequent concomitants. May follow application of cold over lower part of spine, mechanical violence to the region of the kidneys, the hasty or unskilful passing of a bougie or catheter, and great excitement of the genital organs. The influence of the two latter is very questionable.

Urates.—Urine acid, generally of low specific gravity, 1.012 to 1.018, but may be 1.020. Deposit pale, amorphous, but may be also marl-colored, pink, or reddish. In latter case, if slowly soluble by heat, purpurine is present with the urates. Deposit disappears under action of heat, or on addition of liquor potassæ or liquor ammoniæ. When visibly crystalline and the crystals dumb-bell shaped or spherical, with or without spicules, urate of soda is present. Frequently appears after checked transpiration, catarrh, etc.; often more copious after eating freely of animal food. Urate of soda common in gout and rheumatism. *Uric Acid.*—Deposit yellow, pink, or red; visibly crystalline. Crystals dumb-bell shaped with fringed edges, lozenge-shaped, square, hour-glass form, or some compound or modification of these. Deposit dissolves when heated with liquor potassæ. Often found where there is a good deal of

[1] Watson: Op. citat. vol. ii. p. 638.

emaciation, or exhaustion from fatigue, mental or bodily, or both; acute inflammatory disorders; gout; rheumatism, and sometimes functional disorders of heart, liver, and spleen; pyrosis; deficient perspiration, etc. Deficient in anæmia.

Cystine.—Deposit white; always crystalline, never amorphous. Insoluble by heat; soluble in ammonia. Crystals, hexagonal plates. Urine has an odor of sweetbriar; when kept, becomes covered with a pellicle composed of crystals of cystine and ammonio-phosphate of magnesia. Specific gravity usually low. Generally connected with disordered nutrition. The spermatic crystals seen in spermatorrhœa results, according to Fürbringer, from the liberated phosphoric acid of the semen combining with a new organic base secreted by the prostate. *Pus.*—Urine coagulable by heat; generally acid or neutral. Deposit settles down like a creamy mass. In some cases I could only compare it to exceedingly fine particles of semola, or some such material, diffused through a pale coffee-colored fluid. Contains spherical globules not imbedded in a matrix, about an eighteen-hundredth of an inch in diameter, studded with molecules or granules, and showing, when acetic acid is added, a double or triple nucleus. Shaken with liquor potassæ, becomes dense and translucent. Agitated with ether, and the solution gently evaporated, yellow butter-like globules are left. *Mucus.*—In normal quantity and condition, urine slightly flocculent. Deposit easily acted upon by nitric acid, mixes with the urine when shaken. In abnormal quantity and condition, as from severe affection of the bladder or spinal cord, urine may be ropy with alkaline reaction. Deposit coagulable by acetic acid, consists of tenacious matrix with cells, some small or round, others large and flat, with oval nuclei. In addition to these, the urine may contain striated, earthy, flattened corpuscles, possibly from the prostate gland; epithelial cells, casts of uriniferous tubes, and particles of débris apparently thrown off from the posterior part of the urethra and neck of the bladder. These last are not very unfrequently found in spermatorrhœa, especially when it is very severe, and when it has been preceded by gonorrhœa. They may be wholly or in part derived from the prostate. The specific gravity of the urine in these patients is, with the exception of those persons liable to a very free discharge of it whenever the mind is a good deal occupied, about the average, or perhaps a little higher, from 1.020 to 1.021. I have rarely found bile in it, and scarcely ever blood.

Spermatozoa in the Urine.—Professor Bennett, of Edinburgh, one of the most enthusiastic and earliest advocates of the microscope, used to relate a case in which, finding spermatozoa in the urine, he recommended the use of chalybeate instead of purgative mineral waters. This he brought forward as an illustration of the value of his favorite instrument in facilitating diagnosis; with all possible deference to Professor Bennett, I would venture to give this as an instance of the facility with which men

are led away from the path of clinical study by so-called scientific methods of investigation. A patient voiding spermatozoa would certainly be in such a state of prostration as to call for tonics, without any examination of the urine; and the absence of the diagnostic sign in the next ten cases of spermatorrhœa, which would in all probability have occurred, could only have tended to confuse the judgment of those who were taught to rely on it. Dr. Lionel Beale tells us,[1] that the occasional presence of spermatozoa in urine must not be looked upon, in itself, as evidence of that condition to which the name of spermatorrhœa has been applied.

Dr. Golding Bird, a most careful observer, a man who enjoyed excellent opportunities for investigation, which he made use of to the utmost, and who had a large consulting practice in urinary disorders, speaks very guardedly. He says,[2] "spermatozoa are by no means very unfrequent in urinary deposits, a few being occasionally found on examining microscopically the inferior portions of the urine of the male adult;" a way of putting the question rather calculated to excite doubt as to whether he had made up his mind about it. He also points out[3] the serious error M. Lallemand has fallen into of mistaking alkaline for spermatic urine; describing the latter as opaque and thick, as if mixed with gruel, with a fœtid and nauseous odor; characteristics which, as Dr. Bird justly says, are sufficiently common in ammoniacal urine, but certainly by no means so in that containing spermatozoa. Besides, as Mr. Adams points out,[4] the fluid is expelled unaccompanied by sensation, and I quite agree with him when he says, that he does not believe "escape of seminal fluid ever happens without the characteristic signs of ejaculation." Fürbringer more than hints[5] his belief, what Trousseau and Lallemand took for the heads of spermatozoa were simply the small bodies, grains, peculiar to the secretion from the prostate; a view, I should think, not at all likely to find acceptance.[6] Dr. Carpenter says,[7] "In cases of nocturnal emissions, the spermatozoa may not unfrequently be found actively moving through the urine in the morning;" and the late Mr. Teevan, at a meeting of the Harveian Society, mentioned[8] two instances in which he had detected spermatozoa in the urine. Mr. Quekett, who was one of the most truthful and painstaking men living, told me that he had repeatedly examined the urine in very bad cases of spermatorrhœa, and that he had rarely met with spermatozoa, and these invariably in small numbers. I have been singularly unfortunate, for though I employed, as I thought, every precaution, I have often examined several specimens of urine without finding any of these bodies. Dr. William Frazer's ex-

[1] British Medical Journal, 1860, p. 871.
[2] Op. citat. p. 374. [3] Ibid. p. 375. [4] Ibid. p. 57.
[5] Volkmann's Sammlung, S. 1847.
[6] Kaula: Op. citat. p. 48. [7] Op. citat. p. 823
[8] British Medical Journal, 1868, vol. ii. p. 232.

perience coincides with mine. He considers the appearance of spermatozoa in the urine extremely rare, and believes they are never seen except some spermatic fluid is lying in the urethra and is washed out by the urine. Dr. Lionel Beale seems[1] to think they occur pretty frequently, and are even met with in the urine of persons not laboring under spermatorrhœa, and Dr. Dicenta seems to have been unusually successful. He detected semen in urine in 19 cases, and after a hard stool in 23 out of 203 patients. But, indeed, his cases seem to have been much more severe than I have usually seen them. He found blood in the emissions in 2 per cent. of them, or rather in 3 cases out of 153, and out of 410 cases, 6 in which the emissions occurred every night; whereas I have only seen this four times in a very much larger number of patients. M. Donné considers oxalate of lime an almost constant characteristic of spermatic urine.

Spermatozoa may appear in the urine owing to constipation, when straining at stool may force a few into the urethra, or they may enter this fluid after connection or masturbation; but under any circumstances they are found in far too small numbers to qualify them for the rank of a pathological indication. Generally, at the utmost some dozen or fifteen can be observed in the field of the microscope, and even these few only got with difficulty from the lowest stratum of urine after it has stood for several hours; whereas when a drop of real semen, mixed with water, is examined, the field is seen swarming with them. Mr. McDougall says that an eighth-inch object-glass should be employed for the detection of the spermatozoa, and that a Powell's microscope is better than one by Ross for this purpose. Dr. Lionel Beale, however, remarks,[4] I think rightly, that a practised eye will easily detect them with a quarter-inch objective. Of course such minute investigations[2] as those of Dr. Heneage Gibbes into the terminations of these bodies require much higher power and oil immersion. Dr. Golding Bird says[3] that along with spermatozoa, round granular bodies, rather larger than the body of a spermatozoon, are found, and that they appear to be identical with the seminal granules of Wagner. I confess myself quite unable to throw any light upon their nature. I have seen bodies, which appeared to me very similar, in the crusts of eczema when boiled in a strong solution of caustic soda. The same author tells us that large crystals of oxalate of lime often occur in spermatic urine, and that his attention was first called to the connection between the two by Professor Wolff, of Berlin. M. Donné considered the relation of the one to the other so constant, that the presence of the oxalate might be looked upon as a certain indication of the existence of spermatorrhœa. Dr. Bird rightly combats this idea, and my own experi-

[1] British Medical Journal, 1860, p. 737. [2] Ibid.
[3] Quarterly Journal of Microscopical Science, 1880, p. 320.
[4] Op. citat. p. 376.

ence quite confirms his view, as I have repeatedly observed distinct crystals of the oxalate in men who were not only free from spermatorrhœa, but according to their own statement, had never in their lives suffered from it.

State of the Semen in Disease.—Although not in any manner ranking strictly among the complications of spermatorrhœa, this subject possesses a certain amount of interest, and accordingly a few words on it may not be out of place. M. Liégeois, who has paid great attention to this matter, has arrived at the following conclusions.—1. That all men in good health, whether adolescent, adult, or aged, having neither anomalies, vices of conformation, nor any traces of former affections of the organs of generation, have in their semen spermatozoa, the material elements of fecundation. 2. That acute, chronic, or constitutional diseases unconnected with the genital organs do not seem to exert any influence on the spermatic secretion in the adult by giving rise to azoospermia. In aged persons, on the other hand, this is a frequent consequence. 3. That double gonorrhœal orchitis almost always arrests the secretion of spermatozoa, thus bringing on sterility; single, it diminishes this secretion. If the orchitis do not come on from gonorrhœa it is not so injurious. Affections of the body of the testis, such as syphilitic orchitis, act very injuriously in inducing sterility; inflammations in the neighborhood of the testicle and epididymis do not. 4. That spermatorrhœa, as a rule, does not modify the spermatic secretion. It seems however pretty well established that even after double orchitis, there is, provided no permanent occlusion or destruction of the tubes has taken place, a gradual return of the presence of the spermatozoa in the seminal secretion; the period of this return seems to be about eight or nine months. M. Liégeois is right in saying that spermatorrhœa (that is to say, emissions) does not as a rule modify the semen; but in an advanced state of the disease, especially in the case of men who have been guilty of great venereal excesses, this does not hold good, as the fluid sometimes becomes thin, while the spermatozoa are dead, truncated, broken up, or even altogether absent.

Prognosis of Complications.—With the exception of pus in the urine, and stricture, this is usually favorable. Vesicular and prostatic gleet are almost always very manageable; I have seen the former, after lasting twenty years, disappear entirely under very simple means. The surgeon will of course decide for himself as to what opinion he will give about stricture, which naturally will vary with almost every case. I have seen cases where it did not appear at all probable that the urethra would ever be restored to a healthy condition. Pus in urine points to a serious state of matters.

CHAPTER III.

PATHOLOGY OF IMPOTENCE.

Of all the results of long-neglected seminal emissions the most to be dreaded is impotence, either temporary, imaginary, or permanent. When the latter form is thoroughly established, the condition of the patient, if young, or even middle aged, is far from enviable. He thinks himself blotted out, as it were, from the book of existence: and though each passing year may reconcile him more and more to his fate, yet the intervening period is only too often one of utter wretchedness. Looking therefore to the great importance of the affection, I thought it best to discuss it, though both a result and a complication of spermatorrhœa, in a separate chapter.

The varieties of impotence which we meet here are due to three causes: 1, Premature emission; 2, Defective power of erection; and 3, Imagination acting on an excitable state of the system. It is not very easy to assign to each factor in the affection the precise share of influence it really exerts, and therefore I think it will be best to take the three together, and deal separately with those cases where the patient is suffering from a steady decline in the virile power.

The forms of incapacity to fecundate, known as azoospermia and aspermatism, scarcely come within the scope of a work which professes to treat of impotence principally as a result or complication of spermatorrhœa; however, as the specialist in this branch is sometimes consulted for these affections, it may not be out of place to say a few words about them. The absence of spermatozoa in the fluid emitted during connection has often been noticed, and indeed is not very uncommon after double orchitis, particularly when treated with antiphlogistics; naturally enough too, it is an inevitable result of certain destructive changes in the structure of the testicles which I need not particularize, and of occlusion of the epididymis, vas deferens, and ejaculatory duct on both sides, several instances of which have been recorded. Irrespective of this, Ultzmann describes[1] three states of the semen accompanied by absence of spermatozoa. 1. A catarrhal and purulent condition, throwing down a considerable amount of white sediment, in which is found a great deal of epithelium and pus corpuscles, with scattered blood globules; a state due to inflammation of the vesicles. 2. A condition marked by abnormal development of the

[1] Virchow and Hirsch's Jahresbericht, 1878, B. 2, S. 256.

sperm crystals, rudimentary in normal semen, and presence of cylindrical epithelium and molecular detritus; according to the same author[1] these crystals consist of phosphate of magnesia. 3. Colloid semen, which contains no spermatozoa or sperm crystals, but presents a quantity of colloid, degenerated epithelium, and corpuscles heaped together (geschichtete). As I understand Bergh, he considers[2] that absence of spermatozoa may be due, in addition to co-arctation of the canals, to a natural defect in the secretory power of the tubuli themselves; like aspermatism, this is compatible with normal position and seemingly normal state of the testes.

In aspermatism no semen is ejaculated. Of course this is the case in some forms of azoospermia depending on occlusion, but Bergh also describes an idiopathic or nervous form, and I am satisfied he is right. In some persons, even with a perfectly vigorous erection, no fluid whatever, not even urethral mucus, is at times emitted on connection. One patient assured me that this had happened to him three times in a single night, yet at all other times the act with him was quite normal; I had occasion to examine this patient's urethra, and found no stricture whatever. Sauvages, as quoted[3] by Romberg, mentions several cases of spasmodic retention of semen; it does not appear that either of those authors examined the urethra. Mostly it is only the semen which is not expelled, a state sometimes induced by intoxication and bringing on protracted priapism; it may, however, occur quite irrespective of this, and terminate in what has been not inaptly called seminal colic, though perhaps spasmodic stricture would define it as well, for it seems clear that the process is one of spasm, affecting, at different parts, the various efferent ducts. Besides the case just given, may be cited the evidence of Ultzmann, who noticed[4] aspermatism in conjunction with healthy state of the testicles and patulous condition of the canals. Professor Gross says[5] that Schulz and other observers explain Bergh's idiopathic form "by the absence of excitability in the lumbar reflex ejaculatory centre," a view in which "he entirely concurs," but in which other people may decline to concur on the ground that the whole thing is a piece of conjecture. At the same time I must do Gross the justice to say that he here simply follows the example of many eminent men, and that he has investigated the subject of impotence with great care and impartiality.

But to return to the varieties selected for discussion. Instances of premature emission are perhaps the most common, and may be due to nervousness and disuse of function; but we rarely see this symptom alone —usually it is accompanied with some impairment, temporary or permanent, of the virile power. This state may or may not be aggravated by

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[1] Virchow and Hirsch's Jahresbericht, 1876, B. 2, S. 259.

[2] Ibid. 1878, B. 2, S. 256.

[3] Nervous Diseases, Sydenham Society's Edition, 1853, vol. ii. p. 40.

[4] Op. citat. Loc. citat.

[5] Op. citat. p. 123.

the fears of the patient; certainly it is met with, even in an aggravated form, among persons not at all of an imaginative or excitable frame of mind. When we find all the three conditions of mischief united in the same person, we have before us quite enough to make such a man extremely uneasy, or rather, to speak plainly, downright miserable; and this is the state the surgeon is often expected to prescribe for.

A young gentleman calls upon a surgeon, and tells him he committed masturbation in his youth, but gave it up so soon as he was aware of what he was doing. He is now impotent. He has attempted connection and failed. The erection was weak, and the emission took place too quickly. Possibly he is married, or, more perplexing still, on the very brink of marriage, and driven half frantic at the prospect of not being able to consummate marriage. He has never had any venereal disease, or at the utmost a slight gonorrhœa. He never carried self-abuse to any excess, or suffered much from emissions till lately, but he has heard enough, and read enough in some infernal quack book, to frighten him. Does the surgeon hold out any hopes to him of a cure? Does he not think the case a very bad, or rather a hopeless one? Now, here a few kind words, a little judicious advice, may save this patient a world of misery. If proper treatment be adopted, and continence enforced until the desire for it has become irrepressible, the best results may confidently be looked for. Should the surgeon merely ridicule the patient's fears, and tell him there is nothing the matter, he will only add to the mischief.

Again, a continent young man, say from twenty to thirty years old, has suffered a good deal from emissions. He is not alarmed so much about them as he is on account of a growing loss of all desire for connection, which he has noticed lately. He has been recommended intercourse as a remedy for the spermatorrhœa, and has acquired some venereal affection as a result. This has deterred him from all farther attempts, and he feels that if he were now to essay his powers again he would assuredly fail. Here I think disuse of function plays some part, but is assisted by real disorder. There is no fact in pathology better established than that a structure, a muscle for instance, if never exercised, will waste and become impotent. And although the function is here more intermittent than in ordinary muscular motion, yet it is quite contrary to reason and analogy to suppose that a forced unnatural disuse can fail to affect its capacity. Spermatorrhœa and temporary impotence are easily heightened by the action, both on mind and body, of any infection, and the depressing treatment adopted to remove it, and it is better that this should at once be explained to such a patient.

A gentleman consulted me for seminal emissions. He was six-and-twenty, delicate looking, and highly ıtellectual. He was an ardent student, and from moral motives had never indulged in connection; he had never fallen into the habit of masturbation, and did not contemplate

marriage at present. Emissions had come on many years previously, had run through their worst phases, and were now diminishing in number; they had ceased to produce any sensation, and were becoming smaller in quantity; erections, even when he was exposed to excitement, were imperfect. I startled this patient, who had never done anything for the complaint, by telling him that if he lost another year he would become impotent, and this was undoubtedly the fact. Such cases could easily be paralleled. For instance, a gentleman consulted me; he was then little more than twenty-six, yet, according to his statement, he had for quite a year and a half noticed a great diminution in the vigor of the erections. During the last two months this had become so aggravated, that when he came to me he described himself as never having anything like a proper erection, a state of matters which seriously alarmed him. This patient had never had connection, and though he had emissions for a long time he had never suffered severely from them.

In a previous edition of this work it was stated, that a man who remains continent can hardly reach twenty-six without becoming partially if not wholly impotent, that even at twenty-five years of age there is a risk, and that it is doubtful whether complete immunity from this result exists at twenty-four; a statement which awakened some very strong censure. In the main I still believe it to be true, but no doubt it was put forward in so obscure a shape as to convey a very erroneous impression. What ought to have been said was this: Of those who remain continent up to twenty-six a certain proportion do become wholly or partially impotent; what relation their number bears to that of those who escape all such results I have no means of knowing, but judging from my experience it is not so insignificant as might be supposed. I never meant to convey the impression that such patients invariably lapse into total and incurable impotence; on the contrary, I believe their state to be easily remediable. Left unattended to, however, the organs in many persons do not spontaneously regain their natural tone, and at the end of as much as thirteen years of married life I have found that there had been no improvement. This condition is, so far as I know, peculiar to those suffering from emissions, but in some instances these had never been of great severity. The above description has now and then been spontaneously verified by patients, and applies, with ever-lessening accuracy and force, to the age of twenty-five and of twenty-four, the latter being, with one or two exceptions, the earliest age at which I have seen this disposition set up in a marked form.

We often meet with cases in which a man is only impotent at certain times, or with certain persons. This was defined by Mr. Hunter as resulting from "a want of due harmony between the mind and body;" in its mode of operation it is exactly similar to that form of impotence in which the patient is beset with the fixed idea that he is incapable of per-

forming connection, and fails accordingly; as a man breaks down in a difficult leap when he is convinced that he cannot succeed. The fact is undoubted; and I believe I may say, that if it be not generally known among medical men, it is because these matters have been so neglected. This want of harmony is very common among spermatorrhœa patients, and there is a form of it peculiar to them; that is, when men have become alarmed, and attempt connection just to see whether they are impotent or not. Under such circumstances they generally fail, as might be expected; and the result is greater alarm the next time and more certainty of failure than ever, although there is really not the least necessity for either.

Hunter seems to have been disposed to ascribe to the mind more control over connection than I think can be conceded to it. He defines copulation as an act of the body, the spring of which is in the mind. We must in that case admit the presence of mind in all the lower animals, as they not only desire it as powerfully as man himself, but struggle for the possession of it with a ferocity in no way second to that evinced by him. Bird, beast, fish, and insect fight to the very death for their mates. In the pairing season the timid drake will struggle for possession of the female till he is beaten nearly senseless; the equally timid stag assumes, at rutting time, a courage to which he is otherwise a stranger; the male salmon pursues or accompanies the female for hundreds of miles, and engages in the most desperate conflicts in order that he may fertilize her spawn; the butterfly braves death and capture to reach the female insect. Besides, it is most certain that men are powerfully impelled to connection even when their better reason (or mind) condemns the act. I am therefore rather disposed to view the desire for copulation as an instinct in man's natural state, as certainly called into action by its normal exciting cause as the expulsion of the contents of the bowels and bladder is brought into play by the presence of fæces or urine, but more capable of being subjugated by the will, especially when the desire is feebly developed, as sometimes happens in men of very weakly frame or great mental capacity.

All these forms, especially if aggravated by neglected emissions, or, when the power of connection has been retrieved by excessive sexual intercourse, tend steadily and irresistibly to bring on the remaining variety, decline in the power of erection, often accompanied almost to the last by some amount of premature ejaculation. These cases are met with principally at and after middle age, often in persons who have not suffered from any kind of nervous excitement, and who have got over their fear of not having connection properly. Imagination therefore may very likely not be busy here, and the symptoms are possibly due to some organic change in the muscles and nerves implicated in the function. The disposition to this state may be increased by certain causes which were, I believe, wholly unnoticed till I pointed them out a few years ago,

showing that impotence might be brought on suddenly, or rather that a long-lurking tendency to it might be suddenly developed in persons advanced in life, by very slight and unlooked-for causes, such as injuries, *e.g.*, fractures, neuralgia, pain, indigestion, cerebral excitement, long-continued fatigue, etc. As a matter of course, excessive connection and masturbation, in an enfeebled state of the health, tend to induce this result, and very justly; he who recklessly yields to every prompting of sensual indulgence must count upon the forfeit.

The doctrine which I ventured to put forth is that the function of generation, being the most truly remittent of all we are acquainted with, being liable to cease for years, or even for life, without any injury to the health, may be supplanted by disordered innervation of some other part. By disordered innervation, I mean pain, either gouty, neuralgic, etc., in some near part, especially about the neck of the bladder, or else exalted function in some distant part, as indigestion, cerebral excitement; and by supplanted, I mean, that when these actions are set up, the function of generation lessens, as if the vital force necessary for it were absorbed by the diseased action. It may also be mechanically interrupted, as by stricture, etc. As some of the conclusions thus drawn have been disputed, I venture to give a few cases.

Case 1. *From Neuralgic (?) Pain.*—A patient, an elderly man, had suddenly become impotent; it had not occurred, as it mostly does, on the advance of old age, with a gradual decay, the emissions becoming less and less frequent; on the contrary, it had come on quite suddenly, and at the same time severe pain had set in at the neck of the bladder. This continued, with great irritability of the bladder, and pain at the glans penis; sometimes a little blood came after passing urine. He was sounded for stone, but none being found, it was considered ulcer of the neck of the bladder. To relieve this, injections of nitrate of silver were tried, not by myself I may remark; the first produced great pain, but some relief followed and a second was given; the pain after this grew more and more severe, and now never left him day or night. While at the height of his sufferings he was attacked with dysentery. I was in the country at the time, and on my return to town I found him rapidly sinking. He died shortly after, and I examined the body. Great part of the colon, and about eighteen inches of the ileum, were almost gangrenous; but nothing abnormal was discovered in the genito-urinary organs, except that the mucous membrane of the prostatic part of the urethra was of a vivid red; the testes, ducts, etc., seemed quite natural.

When Rousseau, in whom both cerebral excitement and spasmodic pain at the neck of the bladder, with retention of urine, occurred at a very early age, producing temporary impotence, died after a life of torment, no organic change was found, although the organs were examined with the greatest care; so that the physicians concluded that his sufferings had

been occasioned by a spasmodic state of the parts near the neck of the bladder, or of the neck itself.

Case 2.—A patient from the country laid his case before me, and soon after called to have my opinion on it; it was one of severe spermatorrhœa and impotence. He was a professional man; middle aged, pale and dyspeptic, highly nervous, and had never enjoyed very robust health. According to his account, he had never had any symptoms till about two years previously, when they followed almost immediately on a severe attack of tic-douloureux. Emissions at night began; being a married man, he abstained from connection, and when at the lapse of a few months he recommenced, he was alarmed at finding that it took place very imperfectly. He then consulted different surgeons, who ordered him sulphate of iron, and astringent mixtures, without much benefit. I found his digestion considerably impaired, and first of all attempted to set this right, and then prescribed quinine, cold bathing, and a blister. The first attack on the disease was successful enough, and the emissions were speedily reduced to one a month. Soon after this he again came up to town, and informed me that, though he had continued the medicine, diet etc., as prescribed, the emissions were again becoming more numerous. Tincture of steel was now recommended, with another blister, a full meat diet, and active exercise. When I received my last communication from him, though his general health had considerably improved, the emissions occurred once a week, in spite of attempts at connection, and the impotence was decidedly worse. Although such cases are not at all numerous, yet I have now seen a sufficient number to justify me in concluding, that what sets up neuralgia will sometimes bring on an attack of impotence, usually accompanied by emissions.

Case 3. *From Gouty Pain.*—A gentleman, a strong, healthy active man, in the prime of life, consulted me respecting impotence, of which he gave the following account:—After having been long tormented with flying gout, notwithstanding a very temperate life, he had been suddenly relieved from it in the great toe, the last spot it had settled in, and had been attacked with great pain in the urethra, and some difficulty in passing urine. A bougie was passed, and as the obstruction yielded and recurred very suddenly, the disease was pronounced spasmodic stricture; but from the history of the case, and having met with several very analogous instances, I am induced to suspect that gout in the urethra was the disease, and the stricture and impotence (which was not caused here by the stricture) were its effects. Gout, however, when severe, will do even more than this. I had a gentleman under my care who suffered most severely from this painful complaint. Having to live a hard, anxious life, he was quite unable to pay sufficient attention to his health, and to get the rest he imperatively required. By the time he had pretty well thrown off the gout, which tormented him almost incessantly for three

or four years, all capacity for connection had forsaken him. At first, when he had recovered from an attack, he used to feel quite competent; but he soon began to observe that after each fit of suffering this grew less and less, and that there was none at all for a short time before the gout came on, the latter gradually gaining the ascendancy.

Case 4. *From heightened Function in other Parts.* — A gentleman applied in extreme terror at having become suddenly impotent. As he appeared young and healthy, I felt surprised at this. It turned out that having neglected his studies until his examination was close at hand, he had become alarmed, and had betaken himself to them in the most irrational manner, going to bed with his book in his hand, ready to begin in the morning, and sitting up in bed to sleep, for fear, if he lay down, he should sleep too long. He had become exceedingly nervous, and found that on thinking of connection vigorous erections came on; but that, on attempting connection, they immediately subsided, and, while subsiding, emission took place. Quiet, relaxation, and mild aperients soon restored the balance of the functions. These cases are far from uncommon. Intense mental application, confinement, and inattention to health, may, especially in young, irritable, unhealthy subjects, when they at the same time impair nutrition, easily bring on a state of temporary impotence, which the fears of the patient soon magnify into something of alarmng importance. It would be well if all forms of impotence were as remediable as this, which is generally subdued by exercise, society, relaxation and such measures as tend to improve the health. Mr. Curling also mentions[1] a case of sudden impotence from dyspepsia brought on by dining imprudently. He attributes[2] great importance to the action of irritative dyspepsia and oxalate of lime in the urine as a cause of impotence, and has also noticed impotence from albuminuria. This agrees with the experience of Dr. William Frazer, who has usually seen oxalate of lime associated with dread of impotence (imaginary form), and, in approaching attacks, with positive loss of sexual power; and, also, regarding the first of these disorders, with my experience, which is quite to the effect that what sets up bad dyspepsia is very apt to bring on an attack of impotence.

From Stricture.—When impotence comes on in patients still in the prime of life, as from forty to fifty years of age, the emissions growing gradually more feeble and fewer in number, a mere sensation accompanying them, like that of evacuating urine or passing fæces, stricture may often be suspected. It is the more important to attend to this, as many of these patients persist in stating that the stream of urine is as large as ever it was; or, never having had gonorrhœa, and having heard that strictures only follow upon neglected disease of this kind, they can-

[1] Op. citat. p. 422.

[2] Ibid. p. 423.

not understand how one can occur without the other. In cases of this class the stricture appears often to arise from a fold of the mucous membrane growing up,—a fact, I think, shown in the speedy relief given by the application of caustic.

Case 5.—I dissected, with great care, the genito-urinary organs of a gentleman who had died of irritative fever, consequent on an operation performed for the relief of an impermeable stricture. He had become impotent about the time he began to notice a material diminution of the stream in passing urine. On examination the urethra was found extremely narrowed near the bulk. Close to this part were two passages, one lying behind the other; they were on the lower side of the urethra, and were both larger than the contracted part of the tube: they were about four lines long, and were lined throughout with mucous membrane; the posterior lip of the second almost entirely overlapped and occluded the natural opening. No instrument could have been introduced into the bladder, and the exit of urine could only have taken place by the force of the stream pressing down the valve-like fold of mucous membrane; that of the semen must, I think, have been very imperfect, if not impossible.

Case 6. *From Injury of other Organs.*—I was consulted by an elderly gentleman, who stated he was impotent. He was, and always had been, in the enjoyment of a fair amount of health. He had married early, and lived a regular, temperate life, subject only to slight fits of indisposition which interfered little with his general health. His wife bore him several fine children, and he had never committed any excesses. He had lately become impotent, which, upon minute questioning, appeared due to the following circumstances:—About five months previously his foot had been severely crushed, owing to a heavily laden vehicle passing over it. He was attended by an eminent surgeon, who succeeded in making an excellent cure. The severe nature of the accident for several weeks necessarily precluded all attempts at connection with his wife, which had continued much as usual up to this time; but as he began to recover, he grew more and more uneasy at finding that nearly all desire, so far as was manifested by erections, seemed to have left him, and that on essaying connection, the penis remained quite flaccid. Two more instances of the same result from injury to the foot have occurred in my practice. In one, where this member was so badly hurt that, at the end of two years the patient could only walk about a little with great difficulty, complete impotence set in six months after the injury, though the patient was only twenty-nine years old when it happened. One gentleman experienced complete loss of both erectile power and desire, which when I saw him had lasted fully eighteen months, from wrenching his ankle in a bicycle. In a case of another kind, where the patient was cut about the face and shaken by a railroad accident, the spine not being injured, the patient, at

the end of about a year began to find that he was completely losing virility, without there being all this time the least disturbance of any other function. A fourth patient, a strong man about thirty-six years old, suffered from emissions, but not in the least from loss of erectile power till one day, diving, he struck his head against a rock; on this point he said his recollection was most precise. Although the accident was not very severe, and though all effect of it in other respects passed off before long, yet impotence soon after began to show itself; and when I first saw him, three years later, had continued and was getting rather worse. Injury of the back part of the head has repeatedly been known to bring on permanent impotence, accompanied now and then by atrophy of the testicles, some very interesting cases being related by Hammond, who has also collected others, showing the same results from blows on the head and spine. In addition to these the particulars of a case were communicated to me by a friend, in which impotence seemed to have resulted from an injury to the arm and corresponding side of the trunk. Several other cases have been collected by friends and noted down by myself, but being anxious not to swell the bulk of this work I omit them.

Case 7. *From Excitement and natural Irritability of the Organs.*—In addition to similar facts recorded by other writers I venture to give the following:—Mr. C. consulted me. He was twenty-four years of age, healthy, but subject occasionally to a little indigestion and costiveness. He was easily excited, and of a shy, retiring disposition; owing to which, and to his rooted dread of infection, he had never ventured on connection. Some years ago he suffered from irritability of the bladder; the case was rather obscure, and at the wish of his medical adviser he consulted Mr. Syme, who sounded him, but found neither calculus nor stricture. About five years ago he began to notice an occasional emission, which was repeated at long intervals, for about four years and a half, when, having resolved upon marrying, the emissions began to grow much more numerous, and shortly amounted to nearly one every night; they were seldom less than three a week. He was greatly excited about his marriage, and to this he attributed the frequency of the emissions. When he married he found himself quite unable to perform connection. I carefully examined the testes and penis; they were well developed, and the urethra was perfectly free from stricture.

From long-continued regular, but moderate Connection. — In some persons the organs require longer or shorter periods of repose. Marriage and moderation are not always a safe-guard; and unless the warnings of Nature are promptly listened to, temporary, if not permanent, impotence may follow.

Case 8.—A gentleman consulted me on account of impotence. He had enjoyed tolerable health, but had always been rather subject to headache, constipation, and catarrh. At times during the last year or two he

had been attacked by indigestion, till then an unknown complaint to him. This he ascribed, in part, to the long-continued easterly winds prevailing at the time, which not only made him feel ill, but also thoroughly wretched from the dry dusty feeling they occasioned in his skin, and even in everything he touched; he also complained of excessive languor. He suffered little when the winds were accompanied by rain; and during one wet autumn he was quite well, though often drenched to the skin. Some share of the blame might justly, I think, be laid upon his habits; for though extremely temperate, he was a smoker, took little exercise, and was rather slothful. Up to his twenty-second year he had rarely indulged in connection. When little more than twenty-three he formed an illicit connection with a lady in his own rank of life. This was his only excess, and it was not a great one. From that time till his marriage, which took place in his thirtieth year, he was far more continent than most men, and even after marriage he committed no excess, but almost from that day till I saw him, he had (with the exception of the time of his wife's first confinement) had connection once in the twenty-four hours —this had gone on for two years. Latterly the emissions had frequently taken place while the penis was but little erected. Of this class of cases I have since seen many instances.

I presume it is scarcely necessary to refute the doctrine that impotence is due to exhaustion produced by imperceptible draining of semen into the urine or continuous passing of it by the urethra. Such a conclusion was doubted even by Boerhaave, except, indeed, in some very rare case; but he, being before his time, seems to have been afraid to maintain his own convictions in the face of general opinion. There is, however, really no more foundation for it than for the opinion so long upheld, that this imperceptible drain brought on consumption by "carrying off the most balsamic part of the humors."

Hammond quite believes that hard riding causes impotence. He traces the doctrine downwards from the days of Hippocrates, whose account of the matter is, with all deference to the father of medicine, simply incredible, through Reinegg, Klaproth, Chotomski, Nysten and Lallemand; what is still more important, he affirms,[1] from his own observation, that impotence is very common among the "nomadic American Indians, who are the representatives of the Scythians on the western continent." It is a point on which I have no opinion to offer, my experience being limited to observations on the hard riders of England, who, as well as I have been able to make out, are afflicted, if anything, in the opposite direction. Exercise on horseback pushed to fatigue will, like any other form of undue strain on the system, bring on an emission in a person predisposed to or actually suffering from spermatorrhœa; but I have not myself seen any evidence of its setting up mischief in a man free from this tendency. In

[1] Op. citat. p. 157.

addition to this we find assigned as causes fright, disgust, anger, ludicrous thoughts,[1] the temporary operation of which is of course real enough, but only naturally so, there being nothing more unusual here than in their disturbing the sight, hearing, and muscular movements; the use of iodide of potassium, which I entirely doubt and which I am glad to see is doubted by Hammond,[2] at least so far as a permanent condition, while he entirely rejects Rilliet's statement that this salt causes atrophy of the testicles; of nitrate of potass, six months' use of which, according to Dr. Hammond,[3] caused sexual impotence in two patients under his care; of alcohol in excess, of the bromides, and of a number of other medicines mentioned by the same observer, the bad reputation of which he justly thinks "rests on insufficient evidence;" of phthisis, cerebral hemorrhage, locomotor ataxia, the potency of which we can quite understand; of neuralgia of the testis or cord, no case of which has come under my personal observation. Paget says[4] loss of power may follow upon fever. Impotence from revolting tendencies, of which Dr. Hammond has collected[5] numerous cases, belongs rather to insanity, and I therefore, and gladly too, pass it by. Wehle gives[6] an instance of impotence from inhaling the smoke of henbane to remove the toothache; but spermatorrhœa and a certain degree of impotence occasionally follow severe toothache when no sedative has been employed. I have known as many as twenty emissions succeed a bad attack of facial neuralgia where the patient was previously almost free from them, and I think it is probable that in Herr Wehle's case the loss of power was due quite as much to the toothache as to the henbane, especially as sedatives are often prescribed in large quantities without inducing this effect. Along with Wehle's account may be ranged the statement made by more than one author, that impotence is brought on by excessive use of Indian hemp; a statement rather fortified by Lailler, who says[7] that nearly every patient admitted at St. Louis with a disease of the skin has an emission during the night, which he attributes to the strong exhalations from the hempen sheets.

One might imagine that a patient would receive a hint that he was becoming impotent with alarm. Strange to say, the more confirmed a case the less prevalent do we find any feeling of the kind; and often when the patient has reached the prime or decline of life, it seems to be regarded rather as a relief.

In one of the earlier editions of this work I pointed out the extraordinary feeling of cold some of these patients suffer from. A sense of cold in the scrotum, sometimes in small patches, sometimes attack a surface as large as the palm of the hand, is not uncommon in many persons

[1] Hammond, Op. citat. p. 16. [2] Ibid. p. 173. [3] Ibid. p. 174.
[4] Op. citat. p. 129. [5] Op. citat. p. 388.
[6] Oesterreich. medizinische Wochenschrift, 1843, No. 24.
[7] Nouveau Dictionnaire de Médecine, tome xxxiii. p. 486.

in whom impotence has commenced, and I have seen it prevail to an extraordinary degree in some persons who had allowed the malady to go on unchecked for a long time, even extending over the whole surface, the limited form, however, being much the most common. One man, when slightly undressed in my presence, shivered with cold, though it was June; another, a strong burly-looking countryman, told me, that even in the south of France he could walk out on the hottest day wrapped up in a great-coat; "he was never warm," he said. This state is not in any way necessarily connected with feeble health. I have just said that one patient was a specimen of the Dandie Dinmont breed, and I will adduce one or two more instances out of several. A gentleman, a strong wiry-looking man, very fond of field sports, a keen shot, good angler, and remarkably bold climber, told me that he was constantly sensible of a feeling of cold in the testes and scrotum, even in the hottest weather, and that this increased when he was out of sorts. Another patient, who consulted me for the same symptom, said that he never had a day's illness, that he came of a remarkably healthy family, and that he was so strong that he felt as if he could do almost anything. While he was under my care I was consulted by a farmer who suffered from this coldness. He was quite six feet high, and most powerfully built. It is not, however, absolutely limited to impotence. I have seen it in tolerably young patients suffering from spermatorrhœa only. For instance I had under my care a patient in no way impotent, only twenty-six years old, who had suffered in this way for a considerable time past; and Dicenta observed cold feeling of the genitals in five, and loss of internal warmth in nine, out of a hundred and fifty-five cases of spermatorrhœa. Van Swieten seems to have noticed something of the same kind.

I give it as a fact, which I have had no chance of verifying, but which has been communicated to me by men on whose truthfulness I believe I might implicitly rely, that many of these patients, even while laboring under progressive impotence and only partially cured spermatorrhœa, have remarkably fine children. Thus one young clergyman, so situated, reported that the surgeon, who attended his wife in her first confinement, said the child was the biggest he had ever brought into the world. A gentleman, in whom erectile power seemed to have ceased at quite an early age, stated that his four children were reputed to be four of the finest in the county, and so on. A third, who considered his case a very bad one, had a very large child, ten pounds weight at birth, he was told.

Mode in which Impotence takes place.—There are I presume only two modes in which this result ensues, viz., by the agency of injuries or excessive action. The former may act by destroying, dividing, or compressing the nerves leading to the generative organs; the other apparently by causing such amount of reflex action as to set up changes, molecular degeneration in fact, in the structure of the nerves, which, though not per-

ceptible to the microscope, are yet quite sufficient to prevent the exercise of their natural function. We cannot certainly demonstrate such a hypothesis as accurately as we do the binomial theorem, or prove the weight of Jupiter against the earth, but we have some pretty strong proofs. We know that the nervous structures are implicated to a great extent in this function; we know that hyper-action has been set up previously, and that excessive action will produce alteration of tissue, as in inflammation; and it appears to me a legitimate conclusion that this is what happens here.

Professor Gross tells us[1] that atonic impotence, which is the form we are dealing with here, is generally owing to inflammation of the prostatic urethra setting up constant irritation of the genital nerves which terminate in that locality, thus finally bringing about "an enfeebled state of the lumbar division of the cord and exhaustion of the cells that minister to its reflex functions." Dr. Bartholow, who takes the same view, says,[2] "just as the electric eel is deprived of its power of resistance by exhausting the stored-up force of its electric organ," "so may the spinal cord lose by over-stimulation its power to functionate." It would have been interesting if we had been told how much of this explanation is imaginary, and in the absence of such information, I will suggest that by far the greatest part of it is so. In much the larger proportion of the cases I have seen there was no history of what could be properly called inflammation; it has not been proved that the nerves concerned in the production of the erection in the dog exist in man, though belief in their existence is necessary for the completeness of Professor Gross's theory; the hypothesis of an independent lumbar centre is not a fact of clinical or microscopic observation, but rests on an experiment made on one of the lower animals. Lastly, there is no proof that the cells become exhausted. The case observed[3] by Mr. Durham, quoted by Professor Gross, of paraplegia brought on by sexual excesses, in which the most searching examination recorded no change in the spinal cord, can only be taken as evidence here to a very limited extent; for the hypothesis of the paralysis being due to any such cause is expressly spoken of in the original memoir as a mere suggestion. There is no connection between merely power of resistance and exhaustion of electricity in the eel, no analogy between the latter and over-attraction of vital power in the human being to a morbid part; and the storing up of force in the spinal cord as electricity can be stored up is an impossibility.

Prognosis.—Impotence consequent upon wasting of the testicles, severe injuries, and disease or softening of the spinal cord, is necessarily incurable. Long-continued, steadily increasing impotence from excess, especially when the patient has passed his thirty-fifth year, must be regarded in a very unfavorable light. All other cases may, I think, be cured.

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[1] Op. citat. p. 22. [2] Op. citat. p. 55.

[3] Guy's Hospital Reports, 3rd Series, vol. iv. p. 174.

CHAPTER IV.

TREATMENT OF SPERMATORRHŒA.

THE foregoing account of the history and pathology of spermatorrhœa is necessarily brief and imperfect; but however barren a field this part of our subject may be, that of treatment is nearly as sterile. Hippocrates advises for the complaint he describes, which, as I have said, includes emissions, abstinence from immoderate drinking, venery, and excessive exercise, except walking, for a year. The patient was also to avoid exposure to cold and the sun, and to take the tepid bath,—advice which I am afraid was, except in respect to the abstinence, hardly likely to be very beneficial. Celsus recommends for it very strong frictions and affusions: cold swimming-baths, he also says, are useful, and both food and drink are to be taken cold. Moreover, the patient is to avoid all crudities, all flatulent food, and everything that promotes the secretion of semen. As some of my readers may wish to know what the grand old writer included under this last head, I give the list. It comprises winter wheat, simila, most probably corresponding to the flour used by our bakers for making white bread, eggs, alica, supposed to have been the kind of coarse wheat called *spelt* in some places,—now, I believe, disused in England but still grown in France,—starch, all kinds of glutinous flesh, pepper, rocket, bulbs, and pine-nuts. He also suggests fomenting the lower parts with a decoction of astringent vervains, and covering the lower portion of the abdomen with cataplasms of the same herbs, and particularly of rue, steeped in vinegar, and cautions the patient to avoid sleeping in a supine position.

It would scarcely be just to reproach Celsus, as we might very justly reproach a physician of the present day, for basing treatment on principles which he never had, and never could have, proved practically; for he only did what others have been doing ever since. Contrary to what happens in all other arts, men seem to have only too often begun in medicine by taking measures rather from a conviction or fancy as to what would result from doing so, than from observation of what had been seen to follow this,—a practice by no means discontinued at the present day. It will, however, be pretty obvious to those acquainted with the therapeutics of spermatorrhœa, that with the exception of the cold affusion, the application of vinegar and rue to the genital organs, and the avoidance of a supine position, there is little in the prescriptions of Celsus that was likely to have been of service to his patients. Cold food, so far from being bene-

ficial, would, if it exerted any influence at all, act injuriously; as a patient in a state of tabes—for it is this state which he is professing to treat—would require all the support he could get; and one very certain means of nullifying this object would be to make his food unpalatable. As to the properties attributed by Celsus to the proscribed articles of diet, we may dismiss the whole subject at once, by observing that up to the present time nothing has been made out on this head.

Therapeutics fared somewhat better than pathology, but still not over and above well. Even in the earlier part of last century the treatment, bequeathed to mankind by the two great observers just mentioned, so far from being improved upon, had got into a complication which seemed as if it would set at defiance all attempts to unravel it. What with being unable to extricate themselves from the toils of tradition, and the perplexities engendered by the necessity for never leaving the non-naturals out of sight, some of the writers, quoted as authorities by Tissot, do not seem to have had the least idea of how to put any check upon the disease, or of going beyond the form of writing a long epistle in Latin on the case; the reader, of course, bearing in mind that what they professed to treat was recognized as impotence, however induced, onanism, the disturbances which this set up, priapism, and marasmus. As something was always going wrong with the non-naturals, heat melting the humors, spirits rarefying them, fat relaxing the fibres of the stomach, and so on, they had a perfect phalanx of obstacles to overcome. Most of them seemed to have relied on "roborants," consisting chiefly of fresh air of an unattainable degree of salubrity, milk, an unsuitable article of diet in all cases coupled with indigestion, light white wine, which is useless, and remedies for preventing an "afflux of humors" to the disordered parts, which never yet effected the purpose in view. Boerhaave's method of getting out of the difficulty looks very much like a confession of total inability to do anything for anybody so unfortunate as to be obliged to consult him. He can only suggest good food, moderate exercise, foot baths, and frictions carried out with precaution; milk does not stay with such patients (!), over hard exercise on horseback does them no good, and they can't bear aromatics. But, indeed, he seems to have had no fixed principles in his own mind, as in a consultation about a case of impotence, he recommended for trial dry light diet, a small quantity of the best beer, a little very fortifying wine, much exercise, friction with perfumed flannel, and certain compounds of aromatics and bark.

One reason for a great deal of all this I suspect to be the fact, that most of the physicians of that day really saw very few cases, and never rightly appreciated the necessity for examining those which came before them. It is clear from what Tissot says, that the victims of onanism habitually shrank, not only from showing themselves, but even revealing their names. A large portion of the practice of this kind fell

into the hands of quacks of the worst description, and in most of the rare cases which came under the notice of the physician, his experience was confined to the interchange of a solitary letter, the next intimation which he received being that of the death of the patient; cases in which a consultation was required seeming to have almost always ended fatally, or in madness, which meant that the end was near! The picture may appear to be an exaggeration, but there is ample evidence in the literature of last century, both lay and medical, in the writings of Tissot, Martin, and many others, that it is in no way over-colored.

But better times for patients were at hand. Lewis had seized the facts of the case, in some degree at least, recommending cheerful society, cold baths, and mental exercise in moderation; while kina, martial tincture, cascarilla, and winter's bark were coming into use, several quaint formulæ for these remedies being given by Kaula.[1] Injections are also spoken of, but I have failed to make out how they were given. Tissot's treatment of impotence, including of course emissions, marks something like an era in the therapeutics of this disorder. True, he declaimed, as only too many people in that day did, against tea and coffee; but otherwise his treatment was sound so far as it went. He not only inculcated the use of the remedies mentioned above, but added camphor, interdicted suppers, looked upon milk as a very unsuitable article of food, and recommended simplicity of diet.

Hunter treated[2] this disorder chiefly with cold bathing and laudanum, used however long previously in the shape of Sydenham's liquid laudanum by Bongars for debility of the seminal vesicles, and by Etmüller for premature emissions; though, according to Tissot,[3] it must have aggravated the disease, being only useful when the humors are crude, thin, and watery, and the nerves very mobile. Though Sir Everard Home was, perhaps, the first to bring forward[4] a great improvement, that of using nitrate of silver in these cases, yet I am disposed to believe that we are indebted to Hunter for it, that Home stole the idea from Hunter, and that but for the inspiration of his renowned master he would never have thought of caustic in this disorder or stricture. This may seem a harsh charge against the memory of one who long stood so prominently forward almost as the representative of Hunter, and the continuator of his labors; but there is so little in the way of discovery in his writings that it is difficult to divest one's mind of such impressions; and if his fame suffer now unjustly for what he might never have done, the reader must bear in mind that his piracy of Hunter's discoveries, and the destruction of his manuscripts, were acts calculated to expose him to suspicions of the worst nature. The idea was, I need scarcely say, admirably worked out by M. Lallemand, but to M. Kaula belongs really the honor of having been the

[1] Op. citat. p. 193.
[2] Op. citat. p. 204.
[3] Op. citat. p. 260.
[4] Op. citat. vol. ii. p. 249.

first to lay down a complete system of treatment for this affection; and widely as I differ from him on many points, I feel much pleasure in rendering this tribute to the merits of his work.

As the divisions of this complaint differ from each other only in their severity, it may facilitate a clear comprehension of what is now to be stated, if the whole subject be considered under one head. In advanced stages of the malady the treatment must simply be more energetic and unremitting; and with this guide before me, I will now proceed to lay down what appear to me to be the three great rules as to the treatment of spermatorrhœa, which are—

1. To see if there be any complications, such as dyspepsia or neuralgia, which would tend to keep up either emissions or impotence; as until these are remedied there is no lasting improvement. Above all things it is important to overcome the dyspepsia, seeing that, till this is done, the patient's system will often not support the medicines which are most called for.

2. Ever to bear in mind that the great difficulty is to reduce the number of true nocturnal emissions.

3. That after youth the disorder has little, if any, tendency to get well of itself, and that therefore no quarter should be shown it. It is like a conflagration, which can only be safely dealt with by thoroughly extinguishing it.

I will now assume the surgeon has satisfied himself that the case in hand is one simply of nocturnal emissions occurring to such an extent as to injure the health, and proceed to examine the treatment of this part of the subject. And here I may remark, in contradistinction to those who think internal treatment is of little service in these cases, that my observations have led me to an opposite conclusion. I have almost invariably found that these patients require a systematic course of medicine, and that, if benefitted at all, it has always been by a combination of internal with other means. Farther, I can safely say, that by far the greatest number of the patients I have seen required a tonic and sedative treatment, and therefore it may be best, first of all, to consider, *seriatim*, the principal members of these two groups.

Internal Remedies:—Tonics: (*a.*) *Quinine.*—As a general principle it may suffice to say, that when the patient complains of want of appetite and energy, and when the tongue is foul and moist, quinine may generally be given with the best results. Any restlessness, irritability, dyspepsia, or headache, arising from its use, can generally be overcome by the aid of mild aperients and carminatives, and indeed I think it is much better to combine these with it whether such symptoms are present or not. It is rarely requisite to give it in doses of more than a grain, or a grain and a half, twice or thrice a day at first. In many cases I have, however, used it much more freely, raising the dose to three, or even

four or five grains three times a day, not even suspending it at once on account of the buzzing in the ears complained of by some persons. At times the patient appeared to derive benefit from the increased doses, whereas in others it was doubtful whether they were of more use than the moderate ones. I also, in about thirty cases, added tincture of krameria in doses of half a drachm to forty minims three times a day, and in some instances, I thought, with advantage; but I have gradually come to doubt the soundness of the first conclusions, and have therefore abandoned the use of it. In some cases where the constitution has been tried by a tropical climate, and in very irritable persons, quinine cannot be tolerated at first in doses likely to be at all efficient. Here the dilute nitric or nitro-hydrochloric acid forms an excellent substitute. Like quinine, these medicines are usually best given just before breakfast and dinner, or breakfast and lunch; some patients, however, prefer taking them directly after food.[1]

There are some persons who cannot, and some who fancy they cannot, take quinine, and it is quite as difficult to deal with the one as the other; one patient assured me that as soon as he had swallowed a dose of it, the semen began to ooze through his scrotum! At the same time the sufferings of other patients are anything but imaginary. One strong, healthy man, had such severe urticaria developed by it that I at once gave it up; and another, who was very anxious to be cured, being on the point of marriage, said that he was invariably so ill after quinine or any similar medicine, that he would rather face the worst than continue it. Another patient assured me that he had repeatedly taken quinine, and that it had on every occasion disagreed with him; notwithstanding this I again prescribed it in very small doses, but he came at the end of a few days and begged me to order something else, as the quinine was making him so low, weak, and irritable, and certainly he looked so. Again, I have met with evidence, which I have been forced against my will to admit, that quinine in a few rare cases undoubtedly increases the excitability, and tendency to beating of the heart and emissions; but these anomalies are happily enough very rare, and it would not be hazarding much to say, that most spermatorrhœa patients bear quinine very well. The deafness and noise in the head occasionally noticed belong to another class of symptoms, and indicate, not so much that the medicine is unsuited to the constitution, as that the dose is large enough, and that the use of the medicine must not be kept up too long.

[1] ℞ Quiniæ sulphatis. gr. xij, Magnes. sulphatis, ʒ iv, Acid sulphurici dil. ʒ j. Tinct. cardam. c. ʒ vj, Aquæ cinnam. ad ℥ vj; ɱ. Cochleare amplum bis terve quotidie sumendum. ℞ Pil. rhei compos. ↄ j; divide in pil. vj. i omni nocte sumenda. ℞ Acidi nitro-hydrochlor. dil. ʒ i, Syrupi aurantii, ʒ vi, Tinct. cardam. comp. ʒ iij, Liquoris strychniæ, m. ii, Infusi calumbæ, ad ℥ vi; ɱ. Pars sexta bis terve quotidie sumenda. The infusion to be made with boiling water and not allowed to stand more than four minutes.

However experienced a surgeon may be, he can see but a little way into the future, and I can scarcely insist too strongly on the necessity for watching carefully at first over the progress of the case under this or any other treatment. Patients often, indeed generally, fancy that their medical attendant can prescribe something which will at once meet the difficulties of the case, and which may accordingly be continued for an indefinite period. But nothing could be more mistaken than such an idea, especially with respect to quinine. A dose which may be perfectly suited to the emergency of to-day will have lost all its power a week hence; complications of the most unexpected nature will spring up, and however simple and straightforward the surgeon may think his directions are, it will only too frequently happen that the patient has misunderstood them. For all these reasons, I consider that at this period of the case too much pains cannot be taken to secure the full effect of the medicine, and this can only be done by seeing the patient at stated intervals, irksome as this may be to both.

(*b.*) *Tincture of the Sesquichloride of Iron.*—But however useful in restoring strength and appetite, quinine, in the power of controlling emissions, stands much below the remedy just named, which, indeed, according to my experience, is by far the most potent that can be employed at the outset of treatment. In the earliest editions of this work only a very meagre account of the action of this tincture was given; indeed it was not till I had used it for a long time, that I discovered the reason why it failed in so many cases and was yet so beneficial in others. Properly given, it is one of the safest and best medicines the surgeon can use. But it is no specific; the surgeon enjoys no immunity here from that ceaseless attention and watchfulness which alone insure success, and routine prescribing will, as in other disorders, produce its usual fruits, chance cures and frequent failures on the part of the practitioner, and scepticism on that of the patient as to the real powers of the remedy; for men ever have judged, and in such cases ever will judge, by results alone; and will rather be cured by the most consummate empiric, than hear the most lucid and convincing explanation of the reason why they are no better. It is for these reasons that I venture to lay down the following rules, which will perhaps enable the reader to carry out the treatment successfully.

1. The first precaution in giving the tincture is to begin by ordering it in moderate doses, as twenty or thirty minims twice a day. If at the expiration of four or five days no unpleasant symptoms have arisen, the quantity may be gradually increased till the full dose, sixty minims three times a day, or as much as the patient can bear, is attained. Many persons can take a drachm and a half, and even a hundred minims, three times, or as much as eighty minims, or even ninety, four times a day. One patient wrote to me saying he had felt no inconvenience whatever

from six drachms daily, and was quite willing, if I approved of the suggestion, to try an ounce; but as he was getting better, I did not like to risk anything that might lead to a relapse; another said that he took four hundred minims a day; a third that he had been taking five hundred minims daily; a fourth, not a very strong-looking man either, told me he was taking three drachms and a half three times a day. At the same time this increase should always be made very cautiously at first, several patients having reported that, while moderate doses such as twenty to thirty minims acted very beneficially, raising the quantity to a drachm or so at once exasperated the emissions. But if coldness at the stomach, sickness, nausea, or a feeling of distension and griping come on, the dose is as large as we can hope to give for the time being. It is not, however, always necessary on this account to diminish the amount taken; for very often in a few days these symptoms disappear, and so soon as there seems no prospect of their return, the surgeon may again increase the dose of the tincture. Sometimes they are more persistent, and then two or three teaspoonfuls of cognac should be taken after each dose, or half a teaspoonful to a teaspoonful of Howden's essence of ginger.

2. When the patient has long suffered from painful digestion with flatulence, and this is immediately aggravated by the smallest doses of the steel, it should at once be given up, and bismuth, aromatics, and mild purgatives prescribed,[1] with proper food,[2] to remove or allay these symptoms. At one time I tried pepsine extensively in such cases, but have given it up in every form, believing its virtues to be imaginary, or at any rate in point of potency far below those of bismuth as prescribed below. It now and then happens with such patients, that these remedies agree so well at first as to delude them into the belief that the panacea is found, but they really do little more than set the digestion right; little material progress is made till the steel is resumed. This, if possible, should be done soon, and is generally practicable, the indigestion which accompanies spermatorrhœa being usually of a very simple and manageable kind. Mr. McDougall mentions[3] a case in which the simplest food would not remain on the stomach, and the patient had "frequent eructations of fluid which blazed like oil if spit out into the fire," but I have not observed anything like such severity in the symptoms. When dyspepsia resists the bismuth, aromatic confection in combination with sulphite of soda and mint-water,[4] and an aperient pill occasionally at bed

[1] ℞ Liq. bismuth. ammon. cit. ʒ vi, Tincture capsici, m. xv, Acidi hydrocyan. dil. m. xviii, Creasoti m. iii, Spir. junip. ʒ vj, Aq. menth. pip. ad ℥ vj. ℿ. Pars sexta bis quotidie sum. ℞ Pilulæ colocynth. et hyoscyami gr. xxiv; divide in pil. vi. i omni nocte sumenda.

[2] For diet suited to dyspepsia, see the Hygiène of the Skin.

[3] Op. citat. p. 11.

[4] ℞ Sodæ sulphitis, ʒ i, Confectionis aromaticæ Pharm. Lond. ʒ ij, Acidi

time, almost invariably suffice to remove it; and if occasionally ineffectual, are, to the best of my observation, at least as efficacious as the most complicated prescriptions ingenuity has yet invented. The pill should contain sufficient blue pill or calomel to act briskly on the liver.[1] Some few persons, however, never bear the tincture well, and then it is better to try and do with quinine alone; others are afraid to take steel, having, they allege, been told by dentists that it injures the teeth. The latter difficulty is generally soon got over by recommending the patient to take the steel well diluted, to wash the mouth out after each dose, to brush the teeth every morning with red cinchona tooth-powder, and as a last resource, to take the steel through an acid tube; in some few cases, however, I have found that I could not overcome the objections entertained against it. The blackening of the tongue which some patients report, and the blackening of the stools so generally observed, are matters of no moment.

3. Again, some patients suffer principally from weakness with great irritability, sleeplessness, accompanied often by vivid and continuous dreaming when asleep, and despondency when awake; with a coated state of the tongue, constipation and turbid condition of the urine. All these symptoms may occur without any marked disturbance of the digestion. In these cases the best plan is to prescribe a light diet, with two or three extra glasses of wine daily, and to give mild tonics and bitters; as, for instance, dilute phosphoric acid in doses of twenty minims, with an ounce of infusion of chirata or calumba, and a little syrup of orange-peel; or ten-minim doses of dilute sulphuric acid in conjunction with syrup of orange-peel and compound tincture of cinnamon or spirit of nutmeg. Dilute nitric acid, too, answers very well in some of these cases and may be given in conjunction with infusion of calumba and cloves. When these symptoms are effectually removed, which is generally not a very difficult matter, the steel may be commenced with, and after this it is rarely necessary to suspend its exhibition; still less is it requisite to give medicine for every symptom the patient complains of, for some of these patients suffer in so many ways that it is hard to say which organ is most out of sorts. The best plan seems to be to disregard all minor considerations, and keep only the goal in view; in this, as in many other cases, I believe the only safe method to be for the surgeon, when he has once chalked out the line of treatment which he means to follow, to think nothing of whether the patient is at first better or worse, satisfied or dissatisfied, but to keep to those measures which experience has shown will generally land him in success. With returning health all these petty

hydrocyan. diluti. m. xviij, Aquæ menthæ pip. ad ℥ vj. ℔. Cochlearia ampla duo bis quotidie sumenda.

[1] ℞ Pil. colocynth. compos. ʒ ss, — hydrarg. ↄ ss, Extracti hyoscyam. ↄ j. ℔. ft. pil. xij.

troubles will yield, and the patient will wonder how he ever came to be so foolish as to frighten himself in this way about them. At the outset the surgeon often has to struggle with the scepticism of those patients who have previously taken steel and derived no benefit from it, or even suffered from increased dyspepsia after using it. As there is no disguising its taste, and as many of these patients can now read Latin prescriptions as well as we can, the surgeon may as well tell the patient at once, that in all probability he has taken it in too small doses and without proper precautions; that no good could result from using it as he has hitherto done, and that he is now to make a trial of its powers on a widely different system. One fact, which I do not in any way profess to explain, but which I have verified too often to doubt, though in itself of by no means frequent occurrence, is that a patient, as just stated, who has been taking steel with benefit up to a certain standard, will all at once, when the dose has been raised, be assailed by an exacerbation, the emissions doubling in number within a few days. In no instance where I have noticed this has it proved of any avail to continue the increased dose; and, indeed, the importunities of the patient would soon compel the surgeon to reverse any decision to such effect. It therefore only remains to return immediately to what experience showed to be a safe amount.

4. Some persons suffer from constipation when beginning with the tincture; this, however, constitutes no reason for abandoning it. A moderate dose of the aloes and myrrh pill, the combination of compound colocynth with blue pill and hyoscyamus previously mentioned, or of soap, rhubarb, jalap, and hemlock, soon proves effectual.[1] Sometimes the circumstances of the case call for the addition of remedies which act more upon the colon and rectum, and then scammony, galbanum or podophyllin may be requisite;[2] but so long as the leading indications, to act gently on the bowels and liver, and obviate griping, are kept in view, there can be little difficulty in finding appropriate means. Strange to say, when the patient has taken the tincture for some little time, he often begins to find that his bowels act far more freely than he wishes, and at last makes out that the medicine which constipated him at first now purges him—a fact by which he is rather puzzled. I believe the explanation to be this. A very small dose of steel will constipate as effectually as a large one, but while a small dose of the hydrochloric acid has no appreciable action on the bowels, a larger one purges somewhat freely.

5. One of the most necessary precautions is to see that a tincture of

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[1] The reader can try the following, or any other he likes better:—℞ Extracti jalapæ, — rhei, — hyoscyami, Saponis duri, āā gr. vij, Olei cinnam. m. j. ℔. ft. pil. vj.

[2] ℞ Resinæ podophylli, gr. ij, Hyd. subchlorid. gr. iv, Pil. cambogiæ compos. ℈j, — assafœtid. comp. ʒ ss, Olei cassiæ m. ij. ℔. ft. pil. xij. One of either of these pills may be taken two, three, or four times a week.

uniform strength and purity is used. Those accustomed to prescribe this medicine very frequently, may perhaps know that a great difference exists between the action of the tinctures usually sold, but I am disposed to think the profession, generally speaking, are not aware of the fact. A short experience will, however, convince any person that such is the case, and that it exerts so great an influence as to account for much of the disparity observed in the effects of this medicine. I have, after trying several tinctures, found none equal to that prepared by Mr. Thomas, of Pall Mall. It is not so acid as those made by other chemists; it does not affect the teeth so unpleasantly; and finally it does not occasion so much griping and flatulence; qualities due to the great care with which it is prepared, and to the fact that every step in the process, from the first to the last, is carried out at Mr. Thomas's establishment, contrary, I believe, to the practice of other chemists. Finally, I may observe of this tincture that it does not deposit the iron as some tinctures, made by very good chemists, do. The tincture often sold in shops is of such an irritating quality, that the dose necessary to produce some effect upon the spermatorrhœa will make some patients ill. Of this I have had so many proofs, that I now always caution patients rather to do without the steel than procure it from a source upon which no reliance can be placed. Indeed, the preparation is constantly retailed at such a price, that to realize any profit it must consist almost solely of muriatic acid.

The reader has no doubt noticed that I speak of the tincture of the sesquichloride and not of the perchloride, which has so completely superseded the other that some dispensers have never had occasion to use the old preparation. The manager of one large dispensing department told me, that he saw I had prescribed the sesquichloride, but that as a matter of course he assumed that I meant the perchloride tincture. But the fact is that I have, after many trials, completely lost faith in the latter, which I believe to be a mistake and a failure. Its strength is most uncertain even when made with the greatest care, and when hastily prepared, as is sometimes the case, the iron begins to precipitate almost immediately. It would be far better to trust to the solution, though even that is too unreliable to be recommended.

6. The tincture should be measured in a minim glass, as no reliance can be placed on any other plan. The surgeon may easily convince himself of the necessity for this precaution by dropping a fluid drachm, which he will find is equivalent to a hundred and fifty or sixty drops.

7. Sometimes when toleration of the steel has been quite established, a relapse in the spermatorrhœa may ensue without any apparent cause. The remedy for this is to give three or four injections in the manner to be described afterwards, and then to increase the dose of steel fifteen or twenty minims. And this should be done at once, for, contrary to what might have been expected, improvement has in such cases more fre-

quently followed from raising the dose *per saltum* than from adding only two or three minims at a time. Thus a gentleman who had long been taking sixty minims of the tincture three times daily, without ever escaping for more than a week from emissions, tried the experiment of taking eighty minims four times a day; the emissions ceased for nineteen days, and from that time he progressed steadily. Another patient, who was taking forty minims three times daily, raised the dose all at once to a drachm; the noctural emissions, which had only, after long perseverance, been reduced to one in ten days, were almost directly after lessened to half the number; here also the improvement was permanent. In a third and most obstinate case the patient, after more than two months' unremitting use of a drachm three times a day, was ordered four injections and a drachm and a half three times a day; at the end of two months he had only had one emission and no relapse occurred. Many similar instances have been recorded in my case-book, but perhaps these will be sufficient to fix attention upon this fact; a most important one to remember, for sometimes if this golden opportunity be lost, if the tide be not taken at the turn, the chance may not again present itself. It is most necessary for the surgeon to impress upon the patient's mind, that his best chance of a rapid cure lies in giving the disorder no quarter. People often fancy they can easily make up the lost way, but they make a great mistake, and only too frequently find that a relapse is more obstinate than the original disorder. They might as well starve a plant, or stop its growth for a week or two, and then expect it to flourish as luxuriantly as before. I suppose the fact is, that at such times the nutrition is in a state which requires tonics as certainly as in a state of health it requires food and salt; and that the withholding of the one is as injurious as of the other.

Patients sometimes, with the best will, commit the mistake, when they are running short of tincture and are much pressed for time, of eking it out by taking less than the stated quantity, or omitting a dose now and then. A system more certain to end in failure could scarcely be pursued. I have known a patient, most attentive to his case, report that, while taking by a misapprehension two doses a day instead of three, he had relapsed so fast and steadily, that he could scarcely have gone back more on no medicine at all. Consequently, unless the full quantity can be had, the tincture had better be omitted altogether. After the first few weeks of using it, a pause of a day or two is often beneficial, particularly when the patient has got rather tired of it; and later on, taking it for ten or twelve days, and then giving it up for twice as long, will often maintain the full therapeutic action of the steel quite as well as the daily use of it. But to the last it should only be given and suspended systematically.

Under the influence of the tincture of steel, when it agrees and is systematically taken, patients often improve singularly in health, especially

as regards the following points. The muscles get firmer, and both exercise and work are better borne; young men, who complained at first of feeling tired after a walk of a mile or two, constantly say, after three or four months' use of the steel, that they feel as if they must have a good day's walk or a long row to get rid of their superfluous energy. The skin grows harder and smoother, the complexion especially improving, with all the look of more good red blood coursing through the capillaries. The appetite gets keener, particularly for breakfast, and lastly "the showers of blacks before the eyes," of which the patients complain so much, constantly lessen or disappear.

Many surgeons combine steel and quinine in one prescription, but so far as my experiments and the histories of the cases collected in which these remedies had been tried in a combined form warrant me in forming an opinion, it would certainly be, that they were ordered rather from a preconceived idea of the benefits that were to arise from their use, than from experience of the good that had arisen in previous instances. The citrate of iron and quinine is occasionally valuable in cases where languor, loss of appetite, pallor, and dyspepsia are combined. Five grains two or three times a day are enough to begin with, but in most cases this dose will soon require to be considerably increased. The late Dr. Fuller asked me to try the hypophosphite of iron in ten-grain doses. I have only twice prescribed it. In both cases it agreed very well with the patients, who were extremely dyspeptic, but no effect was produced on the emissions; possibly this might be in some measure due to the indigestion, and to the medicine not being continued for a sufficient length of time. I have also tried dialysed iron, which agrees famously in anæmia; sulphate of iron with sulphuric acid; tincture of magnetic oxide and reduced iron. These medicines generally effected some improvement in the health, but as regards their power over the emissions they proved much inferior to the tincture. One very intelligent patient found the perchloride, accompanied by hyoscyamus at night, do him most good.

(*c*). *Ergot of Rye.*—First introduced, I believe, for the cure of this complaint by an Italian physician, who recommended it to M. Lallemand, seems destined to find its place at last among those unfortunate remedies which are one year vaunted as specifics and the next year forgotten; now dragged to light by experimental genius and again neglected for years, till they sink to their due level. It once bade fair to become a favorite remedy for gleet; now I doubt if one surgeon in a thousand ever uses it for such a purpose. Whatever may have been said to the contrary, there is not the slightest reliance to be placed upon the *secale cornutum* as a specific. When used as an adjuvant to proper treatment, it often exercises considerable control over the emissions, and even in some cases of impotence appears to induce a very marked improvement in the character of the erections. But this is all that can in reason be said of it. I state

this advisedly, for not only have I prescribed it in numerous cases without effect, but I have treated many patients to whom it had been given for a long time in both large and small doses, without any change, either for better or worse, taking place.

As an auxiliary means it is, however, well worth while to try it. A drachm three times a day is generally as much as the stomach can well bear, and indeed it is best to begin with much smaller doses, say twenty to thirty minims twice daily. But to be of real service it should be administered in the form of Battley's Essence, a minim of which is equal to a grain of the rye; as to the preparation in the British pharmacopœia it is quite a mistake, being less efficacious, disagreeable to take, and made, according to Mr. Squire, with only half the requisite quantity of ether. Battley's preparation is usually so well borne, that at the end of a short time the full dose may be taken.

All things considered, I think I may say that the cases most likely to be benefited by ergot of rye are those in which steel and quinine have already done some good, where there is little irritability of the system and some tendency to premature emissions and feebleness of the erections, and where local treatment can also be borne. In such cases I always prescribe it, and rarely fail to find it of service; some patients indeed have, of their own accord, stated that they had derived considerable benefit from this medicine. Dr. C. L. Mitchell seems[1] to have given the ergot with great success in some severe cases. In one the patient, who never passed three nights consecutively without an emission, and who generally had, when they began, three emissions within the six hours, had become almost entirely incapable of attending to business. He was immediately relieved and ultimately quite cured by the daily use of thirty to sixty grains. In another case the patient, who was also an opium-eater, had become almost imbecile. The emissions were however entirely arrested within seven days from the beginning of the treatment. In a third, the patient was also suffering from irritable bladder and spasmodic stricture, but ten grain doses of the ergot and three of camphor, every three hours, relieved him almost immediately. I at once confess that I have never had anything like such success as this, though I have given the ergot in all doses up to a drachm singly or conjoined with camphor.

Sedatives.—(*a.*) *Camphor* is often of great service in checking that form of spermatorrhœa which is apt to ensue in some irritable persons after an attack of gonorrhœa; it is likewise useful in recent and sudden outbreaks of the malady, and even in chronic cases, though occasionally it is not to be relied upon, it is often of great value. A gentleman, a surgeon, who sent his brother to me for this complaint, informed me

[1] American Medical Monthly, April, 1861.

that the constant use of the camphor alone had worked a complete and lasting cure, although the case was a very bad one. The patient resided in a distant part of Russia, where he could get no medicine except the spirit of camphor, of which he contrived to import two or three large bottles. He took it constantly in large doses for quite three years, and recovered so completely that he ventured to marry, a step of which he had previously entertained the greatest dread. When used, it may be given in doses of half a drachm to a drachm of the spirit, and this may be gradually increased to a drachm and a half, or two drachms. It is taken in a wine-glassful of water at bed-time; or, if the patient prefer it, in the same quantity of sweetened milk, for preparing which the Aylesbury tinned milk is very convenient. It is a very good plan to have it in readiness by the bed-side, so that if the patient should be awakened by an erection, and can recover his consciousness sufficiently, he may at once take a dose. He may thus often prolong the period between the emissions, until the organs, no longer exhausted by the drain, recover their normal strength. The essence of camphor made by Messrs. Slinger and Son of York, is a much superior preparation in point of taste and convenience, being perfectly miscible with water. It may be given in doses of one to three drachms, and repeated like the spirit.

As the sedative action of camphor seems to pass off very quickly, while a certain amount of irritative action, which it clearly possesses on the stomach, throat, and mouth, is apt to increase to such an extent as to inconvenience the patient, I have found the best way of taking it to be in full doses, once, twice, or even thrice a night when an emission is impending, or when the patient is much pestered with erections; and so soon as ever an emission has occurred to give it up till another one is due, when it may be resumed. Used in this way, its control over the disorder, though not always certain and often not very marked, is nevertheless in some cases indisputable. There seems to be very little doubt that it acts by securing rest to the parts. Some persons do not bear camphor very well. It makes them sick, gives them a nasty taste in the mouth, induces sleeplessness instead of quiet, and not unfrequently brings on a certain amount of headache. In many cases this state of matters soon passes off, especially if the patient be taking tonics at the time; but in others it has compelled me, in the long run, to give the medicine up.

(*b.*) *Lupulin.*—This remedy, strongly recommended by Dr. Sigmund, of Vienna, I have tried very largely. It is an agreeable medicine, and when a vegetable tonic and sedative is required it is an excellent adjunct; there its merits begin and end, and the surgeon who looks to it as a specific will most assuredly be disappointed. There is no such thing as a specific for spermatorrhœa; at any rate lupulin is not. I have given it to hundreds of patients, in every dose, from five grains to a drachm, taking every possible care to secure the best hops, and I have no hesitation

in saying, that it cannot be relied on for producing anything beyond a mild and uncertain effect. Dr. Pescheck[1] found lupulin in these cases relieve indigestion and irritation in the urethra. The surgeon should be careful to use only the lupulinic glands or grains, obtained from the strobules of the hop plant. They are of a reddish-golden color, and granular; whereas the lupulin, or rather lupulite,[2] obtained by treating the aqueous extract of these grains with lime and alcohol, is a yellowish-white, uncrystallized powder, and is not to be relied on as a sedative in this affection. Probably from a scruple to half a drachm will be as much as is generally required at the beginning, but I do not hesitate to give a drachm when necessary, and I have been told by patients that they had carried the dose much higher than this. One gentleman from Edinburgh assured me that he had taken three drachms daily for some time, with decided benefit; while another patient reported that he had taken three drachms at a dose, before going to bed, without any benefit at all. It may be worked up with a little strong spirit into a paste, and made into pills; if possible the patient should do this himself. Or the dose may be taken in a little of the Aylesbury condensed milk, or rubbed down with sugar in a mortar, as first recommended, I believe, by Dr. Bumstead.[3] Like all strong preparations of hop, lupulin sometimes produces headache, but a few days' use of the remedy generally witnesses a termination of this symptom.

(*c.*) *Nepenthe.*—When camphor fails and when the case is severe, I believe it will be found better practice to turn to this drug, of which, except as regards its effects, I know nothing more than that it is prepared from the poppy by Messrs. Ferris, of Bristol, and that it has no sort of connection with the drug which Helen added to the wine intended for the guests of Menelaus, with the nepenthe of Zwinger, or that of botanists. It has more control over emissions than either laudanum or Battley's liquor opii, and many patients have said that they considered it the most potent agent in the cure. It is given in doses of fifteen minims on going to bed, and this quantity is increased by five minims every second night or so, according as the patient can bear it, till an emission occurs, when it is left off, like the camphor, till he thinks another is due. He then begins again with the small dose, increasing as before. In most persons nepenthe constipates the bowels somewhat, an evil, however, easily provided against by a free use of aperients; but in some cases its operation is attended with drawbacks which are not disposed of with such facility, the symptoms being headache, nausea, and even vomiting, all of them signs that the dose has been raised too quickly. The remedy is to give

[1] Buchner's Repert. für Pharm., 1856, No. 1. Quoted in British and Foreign Medico-Chirurgical Review, vol. xviii. p. 265.

[2] Pereira's Materia Medica, 1839, vol. iii. p. 741.

[3] The Pathology and Treatment of Venereal Diseases, 1868, p. 81.

the medicine up at once, and let the stomach have three or four days' rest, by the end of which time it has generally settled down to quietness. The patient now begins again with a small dose, and never goes beyond one which experience has shown him to be perfectly safe. Henceforth, too, the nepenthe should be taken either with a little cognac or compound tincture of cardamoms. Some patients never bear more than thirty minims for a dose; others have reported taking a drachm or a drachm and a half without feeling any ill effects. The use of the nepenthe at bed-time can be followed up by that of the essence of camphor during the night, in the event of the patient being much plagued with erections.

(*d.*) *Digitalin* may be ranked with this class of sedatives. It requires, however, to be handled with extreme care, from its well-known power of depressing the action of the heart. Most persons cannot bear more than the fiftieth of a grain at a time, and even this quantity should not be continued long. It may be given dissolved in spirit, or in the form of a pill, although Mr. Squire, in his excellent *Companion to the British Pharmacopœia*, is of opinion that it might with advantage have been omitted altogether from the latter work, the dose being, in practical dispensing, as difficult to weigh as it is to test the purity of the drug itself. Of course the latter must be secured, or it is of no use to prescribe the alkaloid, but I am not disposed to think that the difficulty of prescribing it ought to stand in the way. By triturating it previously with liquorice powder, a quarter of a grain may be weighed out, and beyond that it is unnecessary to go. I give below formulæ for exhibiting it either in solution or pill.[1] It is often of service in those cases of excessive excitement, venereal or purely nervous, which occur occasionally in spermatorrhœa, and used with ordinary care is a perfectly safe remedy. I have prescribed it with very good effect in these emergencies, rapidly subduing the excitement by its aid. In one case the effect was particularly well marked. The patient was suffering excessively from emissions. He complained of great pain in the back of the head after them; as also of most disagreeable and alarming pulsation in the neck, temples, etc. Yet the digitalin in small doses three times a day began to relieve the symptoms almost as soon as it was taken, and he got quite well. Another patient, very similarly situated and treated, reported also complete amendment from the use of the alkaloid. One gentleman found digitalin relieve "the thumping in his head." But I should never trust to such a remedy for the cure of the disease, and I should hesitate about using it for a long period, such as is required for the permanent removal of a chronic affection, unless I knew, first of all, more about its action. M. Lucien Corvisart re-

[1] ℞ Digitalini, grani quartam partem, Spiritûs rectificat. m. xx. ℿ. et adde, Tinct. valerian. ammon. ʒ xvss. ℿ. ʒ j. fluid. bis terve quotidie ex aquæ cyatho vin. sumend. ℞ Digitalini, gr. ss. Ext. anthem. ʒ ij. ℿ. ft. pil. xxx. i. bis terve quotidie sumenda.

ported[1] three cases as being greatly benefited by the use of digitalis, though not one of them seems to have been cured. Dr. Lescher employed this drug with good effects in one case, on M. Corvisart's plan, giving the powder in doses of one or two grains gradually increased up to eight grains.[2]

(*e.*) *Opium.*—When we require a sedative to relieve excitement, as also to soothe pain and aching in the urethra and testicles, supposing the latter symptoms should happen to be present, which is not often the case, opium is the drug to trust to. It will often bring about a feeling of repose which nothing else can yield; and though it may sometimes produce a slight amount of constipation and headache, yet these are trifling ills compared to loss of sleep and nervousness. I should not advise opium however if it can be dispensed with, unless there be pain or sleeplessness. Its power of checking emissions, except when these complications are distinctly instrumental in keeping them up, I believe to be very limited, and it often disorders the patient's stomach; so that generally at the end of a few weeks, or even sooner, the surgeon has to abandon it without having done any good. Mr. Hunter sometimes gave opium every night in the fluid form and cured a bad case with it alone. It may be given in the form of solid extract or Battley's solution, and to the extent of about a grain for a dose of the former, and fifteen or twenty minims of the solution; when catarrh is present the ordinary tincture seems to answer better than either. But I need scarcely say that the quantity must vary according to the severity of the symptoms, the susceptibility of the patient to the action of the medicine, and other circumstances of the case. I have often doubled, trebled, or even quadrupled these doses, and should have no hesitation in going beyond this if I thought that by so doing more effect on the emissions could be produced; on the other hand ten minims of liquor opii will sometimes affect the head unpleasantly. As a vehicle, the brandy mixture of the pharmacopœia answers very well, or the dose can be given in compound tincture of cardamoms and peppermint water. If the patient really suffer from constipation after using opium, a mild aperient will soon remove all cause for complaint. Some patients are afraid to take it lest they should turn opium eaters, and never be able to do without it again; a fear as chimerical as that a man who took a glass of wine must necessarily turn a drunkard. I have seen opium in very moderate doses produce disagreeable effects in some persons, as for instance violent urticaria, accompanied by excessive itching and even peeling of the skin of the hands and feet; in others a temporary, but almost total, loss of power to expel the contents of the bladder and rectum. It is also to be remembered that, like all drugs which act as

[1] L'Union Médicale, Avril, 1883.

[2] Bulletin général de Thérapeutique, 1854, ii. p. 76.

astringents and at the same time subdue pain and excitement, it will, if given too freely, almost certainly in time bring on some torpor of the liver.

(*f.*) *Belladonna*, first employed, I believe, by Lepri,[1] has often been recommended in this complaint, and apparently on every occasion as a new idea.[2] M. Trousseau used[3] to give it internally, order it to be rubbed on the perineum, and use suppositories of it at the same time. He thought it available chiefly in those cases where there was spasmodic action. I have had little experience of it, and that little has not been of at all a satisfactory nature; dilatation of the pupil, giddiness, feeling of general disorder having followed the prolonged use of even very moderate doses. But indeed spermatorrhœa is not in general relieved by remedies which act speedily and severely; but by those which raise the standard of health, and remove complications, such as pain and sleeplessness, which may be distressing the patient, and the doses of which we can raise when it is thought fit to do so. Stephanides and Novatschek have used atropine internally with that unvarying success which seems to attend all new remedies.[4] It failed in my hands to do any particular good, as did gelsemium, both singly and combined with bromide of potassium.

(*g.*) *Hydrate of Chloral.*—This remedy has not answered well in my hands. First, in some persons, given even to a very moderate extent, such as ten to fifteen grains, it brings on a beating in the head, which one patient compared to a sense of thumping and another to the sound of a great hammer. One patient, who slept very well the first two nights under its influence, told me, that the next two it induced such frightful excitement and inability to remain lying down, that nothing would induce him to try it again. Besides, the hot salt taste of it is very repugnant to some persons. Secondly, I have never seen it do any, even the slightest, good in restraining the emissions, nor among all the patients who have come under my care and had been taking this drug, have I met with a single instance of benefit derived from the use of it; and I need scarcely remind the reader that, under the influence of the craze which always sets in on the introduction of any new and powerful remedy, chloral was at one time prescribed for pretty well every case of which pain and excitement formed symptoms. I believe I may safely say that, at the time spoken of, I was scarcely ever consulted by a spermatorrhœa patient who had been under treatment at all and had not taken the hydrate. Deterred, then, by so many failures, I have long ceased to give chloral for the emissions themselves, and have restricted its use princi-

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[1] Gazzetta Medica Toscana. Quoted in Gazette des Hôpitaux, 1854, p. 163.

[2] Lancet, 1870, vol. ii. 769.

[3] Revue Médico-Chirurgicale, 1855, Mars.

[4] Virchow und Hirsch's Jahresbericht, 1879, B. 2, S. 234.

pally to cases of sleeplessness and excitement. Here, in conjunction with bromide of potassium and preceded by a dose of opium, it acts very well. It is but just to say that very different results have been noticed by other observers. In the *British Medical Journal* for 1871[1] there is an account by Dr. J. B. Bradbury of a case, in which seminal emissions occurred almost every night, being, to all appearance, perfectly cured in three days by as many fifteen-grain doses of the hydrate; the patient remaining free from the disease, and being quite well at the end of eighteen days more, or three weeks in all. The same gentleman records a second case, also ending most satisfactorily.

(*h.*) *Bromide of Potassium.*—For many years I used this salt as a sedative, and think it, like chloral, with which I usually conjoined it, of service where there is much excitement and sleeplessness, but only then. After numerous trials I have seen no reason to believe that it possesses any great power of curing the disease; what is more, I have been distinctly informed by patients that they were worse after a long course of bromide than before, and other surgeons have communicated to me experience completely to the same effect. Like all remedies which act in such a way, its use is apt to be followed in some persons by headache, and in others by a feeling of congestion on waking up in the morning, as if they had slept too heavily. To act at all it requires to be prescribed in doses of a scruple to half a drachm; it may be dissolved in camphor mixture, cinnamon water, or even simple water. M. Thielmann and Dr. Pfeiffer are said[2] to have been very successful with it. M. Binet has also recommended it strongly.[3] Dr. Soresina, Dr. Scarenzio, and others have procured their patients prompt relief with full doses of this salt. Scarenzio mentions[4] a case in which very severe emissions were checked in fifteen days by the use of bromide of potassium, carried to the extent of twelve grammes, a little more than a hundred and eighty-five grains, daily. The cases recorded in the Italian journals seem to be principally those in which the disorder was accompanied by very troublesome erections. Erichsen recommends it[5] in over quick emission. It must not be forgotten that serious symptoms have been known to result from the protracted use of this drug,[6] although the fact is denied by Dr. Broadbent, and I should therefore consider such a mode of giving it as scarcely justifiable unless accompanied by proper tonic and local treatment.

I look upon the constant resort to chloral and bromide in this affection as worse than the worst form of dram-drinking, and very little bet-

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[1] Vol. i. p. 363.

[2] Medical Times, 1858, vol. i. p. 351; 1859, vol. ii. p. 494.

[3] Presse Belge, 1858, No. 8. Medical Times, 1858, vol. i. p. 301.

[4] Annali di Omodei, 1863, 185, p. 342.

[5] Op. citat. vol. ii. p. 789.

[6] Medical Press and Circular, April 3rd, 1867.

ter than smoking opium. Two of the most hopeless cases of spermatorrhœa I have seen occurred in men who had for some two or three years previously given way to this habit, having, most unfortunately for themselves, derived in the beginning some slight advantage from the bromide. The first of the two, a man about forty, was a complete wreck, body and mind. He always carried with him a tolerably large bottle of bromide solution, first prescribed for him by a physician who had great faith in the drug, and took it as the drunkard would take his drachm, two or three to five or six times a day, with the effect of becoming month after month more impotent, wretched and irresolute; indeed, the power of rousing himself to action had apparently quite deserted him. Step by step he had broken up his home, severed himself from his family and friends, and ruinously injured his professional income by constantly alleging his incapacity to take the work offered him. He knew that the bromide was doing all this, yet such mastery had the pernicious habit of half stupefying himself gained over him, that on my refusing to treat the case unless he would promise to give up the bromide, he could not prevail upon himself to relinquish a medicine which, he said, always soothed him. In the second case, that of a professional man who never went a day without taking the bromide, the patient at once admitted that he was a great deal worse than he had been two years before, when he began with the remedy; and according to his own account, was now in such a morbid state that he could not take even very small doses of any medicine likely to do him good without being made thoroughly ill. Yet the bromide, at the best, only yielded him what he called "an enforced calm," "a leaden feeling of easiness." Humanly speaking, I feel pretty sure both these men would have been cured if they had been treated with steel and injections, whereas daily intoxication would hardly have aggravated their symptoms more than medicine had done.

(*i.*) *Bromide of Ammonium.*—When it is really thought necessary to give a remedy of this kind, the ammonium salt, which I first tried at the suggestion of Mr. Algernon Bale, will, I believe, always be found to answer better in every way; and, as a sedative, a compound of this with ether and chloral [1] offers perhaps the best combination of the kind, certainly the best known to myself. One patient, with a very irritable stomach, said the taste was much improved by adding compound tincture of lavender; and another patient, very attentive and observing, who had taken large doses of steel and strychnia, reported that the only remedy which procured him a complete break in the emissions, doubling any previous interval, was a combination of the bromide with essence of camphor and syrup of poppy. Yet such compounds are best reserved for

[1] Ammonii bromidi, gr. xxv, Chloral hydratis, gr. v, Spir. ætheris, ʒ ss, Syrupi aurantii, ʒ i, Aq. menth. pip. ad ℥ i; horâ decubiturâ sumend.

cases where excitement, sleeplessness, and inability to lie down at night become so marked as imperiously to call for relief. With such troublesome symptoms before us something must be done, and as well as my own experience enables me to judge, it is best done by such a compound as that just mentioned. If the patient happen, as is not so very seldom the case, to be suffering from pain, particularly of a neuralgic character, I always recommend that a draught containing a small quantity of either laudanum or Battley's sedative, should precede the bromide by at least two hours; for the administration of which I know of no better formula than that suggested at page 385, repeated observation having satisfied me that opium agrees best when accompanied by a good strong aromatic. The dose in the formula is to be looked upon as merely tentative, many persons requiring at least double the quantity; while some patients are not inconvenienced by as much as sixty or seventy grains. But even given to this extent, the bromide possesses decidedly less control than the nepenthe over the emissions, and is more disagreeable to take. Both bromides often disagree, even the ammonium, though less prostrating, making the patient feel low, with pain in the back, and aching of the legs.

We must now turn to a class of medicines of a very different nature, but in their way as valuable as the others, and indeed in many cases indispensable. These are remedies which possess among other qualities that of setting the secretions right to a certain extent. I remember that in a course of lectures delivered at the College of Surgeons, the lecturer informed his hearers that he did not understand what was meant by setting the secretions right; and as no one, so far as I am aware, ever expressed an opinion on the statement, it is possibly now doing duty as a principle in surgery. I may therefore as well state that there are certain conditions in which the secretions are wrong—*e.g.*, when the tongue is very coated or very dry; the urine unduly loaded with deposit and mucus; when the stools are pale or excessively dark; when they are extremely hard and dry, then I believe the secretions of the tongue and buccal membrane, of the kidneys and bladder, of the liver and intestines, are out of order, and that there are certain medicines which set these conditions right, among which are aperients and diuretics.

Aperients.—Properly given, these remedies are often of great service in such complaints as spermatorrhœa, and should be administered whenever the bowels are torpid and the stools pasty or very dark-colored. One of the best chances of success in treating disorders of a depressing, wasting kind, is to improve the nutrition of the frame, and this is often effected in a very marked manner by the use of purgatives. How they act it is difficult to say, but the fact is undoubted and is quite familiar to those who have often watched the operation of these remedies. They know well that those patients, who have endeavored to improve a feeble state of

health, and rouse a flagging appetite by stimulating and tempting diet, do not get better unless plain food is substituted, and the bowels are steadily acted upon until the stools become of a bright yellow.

Many patients fear that the continual use of such medicines must be lowering to the health; but this is a very groundless dread, as it is not requisite to use them to such an extent. Others fancy that if once they begin with purgatives they can never stop again, but must gradually carry up the dose as in opium-eating, an apprehension as unfounded as the others. In many forms of skin disease I have to give acid preparations of iron for a long time, often for five or six months together; in such cases an aperient must almost always be prescribed in order to obviate the constipation which sooner or later comes on. Now although I have pursued this course of treatment for some years, I have never known an instance where anything like permanent costiveness ensued from so doing; after the patient has left off both medicines the bowels seem to come right without requiring anything to be done. In short, the surgeon may pursue the advice of the old Scotch physician to Sir Astley Cooper "to keep in the fear of the Lord and your boo-els open," with a clear conscience, especially if he take the precaution to give tonics and inculcate a plain diet. There is no need for drastic purgatives; the requisite amount of action is easily obtained by such combinations as the pill recommended at page 376. As obstinate constipation is not common in spermatorrhœa, it is seldom requisite to prescribe more than one pill at bed-time, and it is not necessary to continue that for any length of time, though in my opinion a moderate use of these remedies is indispensable. In an occasional case, where the tongue is coated, the breath foul, the stools continuing, even under the use of these remedies, pale, pasty, and adhesive, a small quantity of salts and senna, citrate of magnesia, or a little saline of any kind,[1] may be usefully given the morning after the pill. We see this kind of thing occasionally when the patient has been worrying a good deal about his case, or has been living too fast. The latter, however, is rather a rare incident—as a rule spermatorrhœa patients do not live too fast; so far from it, they generally err on the opposite side. M. Kaula speaks of constipation accompanying spermatorrhœa as being very common, and quotes[2] in support of this a most obstinate case, but the opinion does not exactly coincide with my experience.

Strychnia.—In the few old-standing cases of constipation which we occasionally encounter, the active principle of nux-vomica is useful employed as an adjunct, especially when the disorder has attained such a height that mucous discharges occur after stool, or when the fæces can

[1] As for instance the following :—℞ Magnes. sulph. ʒ iv, — carbon, ʒ i, Potass. nitratis, ʒ ii, Syrupi zingib. ʒ ii. Aquæ menth. pip. ad ℥ iv. ℔. Coch. amp. mane sumendum.

[2] Op. citat. p. 189.

only be dislodged by enemata. It is, however, only necessary in such cases, and they are, as I have already intimated, by no means common; nine times out of ten the confined state of the bowels may be overcome by the use of the aperients mentioned. At one time I considered strychnia, a rare case or two excepted, a perfectly safe remedy in the usual doses, a twentieth to a sixteenth of a grain daily; but exceptions to this rule occurred so often, even in strong healthy looking people, most unpleasant excitement having been set up by the thirtieth of a grain, that at last I ceased to prescribe it generally, believing that there are many remedies quite as efficacious and much safer.

But though I have abandoned strychnia in the solid form, I have for some years past employed it as an adjunct to the steel, having noticed in it a property with which I was not acquainted, that of enabling the system to bear a dose of the tincture which otherwise it would not tolerate; a fact respecting which I have no explanation to offer, though I have verified it far too often to entertain any doubt of it. Yet even given in this way, I have seen ample reason to believe that my earlier fears as to the violence of its action in certain constitutions were only too well founded. Several patients have not been able to bear more than half minim doses, some could not support even this quantity; nor have I been able to connect this idiosyncrasy with any particular state of health, or any particular temperament. One gentleman, strong-looking enough and seemingly in high health, tried three times to take half a minim of liquor strychniæ two or three times daily, and on each occasion was speedily made so ill by it that he begged to be allowed to discontinue the medicine; while another patient, a surgeon, who as far as looks went might have been cast in the same mold, distinctly told me that he had taken twenty minims thrice daily for some time without experiencing any ill effects. As it is better when dealing with a drug like strychnia to err on the side of caution, I always begin with a quarter or a third of a minim dose, which can be raised if tolerated by the system to three, four, or five minims three times a day. When continued for a certain length of time the remedy certainly seems to have some degree of control over the emissions, while it usually in the young augments the vigor of the erections. I have not observed that, even in large doses continued for a long time, it usually exerts, if employed alone, any particular influence over the movements of the bowels, constipation, when previously existing, going on much the same. When strychnia fails to avert the indigestion which steel brings on in some persons, spirit of chloroform can be combined with it; and should the patient be suffering from any disease of the skin calling for the administration of arsenic, the solvent solution of de Valangin, by far the best and most manageable preparation of this drug known to myself, may be added.[1]

[1] ℞ Tincturæ ferri sesquichloridi, ʒ iv (ʒ vi), Liquoris strychniæ, m. iii, Spir-

Diuretics.—Mr. Curling says "that diuretics, or remedies which excite the action of the kidneys, as the nitrate of potass, are found to act as anaphrodisiacs." This may be true of such remedies used in excess, but it does not hold good in respect to their proper employment. I have not recognized this effect from the nitrate of potass, although I have used it for several years, which, however, may be owing to the fact that I have always employed it in very moderate doses. M. Lallemand says[1] that nearly all those who took squill, nitrate of potass, and digitalis, observed a marked exacerbation of the seminal discharges (*une augmentation notable des pertes séminales*), and that the nitrate proved injurious in every instance—an opinion founded upon forty cases, he says, some of which were certainly lamentable enough. But M. Lallemand has left us perfectly in the dark as to the dose, a most important point. In one case only can we arrive at any estimate, and here we are briefly informed that an ounce was taken in three days. Now, no one who has seen the irritability of the bladder and kidneys produced by nitrate of potass, or any strong diuretic salt, in gonorrhœa, will be much surprised to learn, that such needless over-dosing brought on a "notable augmentation" of the symptoms in spermatorrhœa. Properly employed, that is to say in moderate doses, and given in a suitable vehicle, the nitrate is a very useful medicine in those cases where the patient complains of a foul tongue and thirst, with nausea and lassitude; when the urethra is tender and smarts from the passage of the urine; when the urine is turbid and the stomach disordered; when the stools occasion smarting and heat at the anus, as also when there is harassing cough and a good deal of mucus is expectorated; when there is a low, inflamed, or irritated state of the gastro-intestinal tract, marked by dryness of the tongue, heat, and uneasiness in the stomach after food, and on rising in the morning; for these symptoms indicate a disordered state which is often instrumental in keeping up the spermatorrhœa. In all such cases I have frequently used the nitrate of potass with success, in doses of five to twenty grains, with compound tincture of camphor or hyoscyamus and a little red syrup; occasionally adding the sulphate of magnesia or potass when an aperient was called for.[2]

Copaiba.—One surgeon having given a flattering account of the action

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itûs chloroformi, ʒ iii (ʒ iv), Solutionis solventis mineralis, ʒ i, Syrupi ad ℥ iii. ℞. Cochlearia minima duo bis terve quotidie sumenda.

[1] Vol. iii. pp. 336, 337.

[2] ℞ Potassæ nitratis, ʒ i, Tinct. camphoræ comp. ʒ iij, Syrupi rhœad. ʒ vj, Aquæ menth. virid. ad ℥ vj. ℞. Cochlearia ampla, ij. bis quotidie sumenda. ℞ Potassæ nitratis, ʒ iss, ——sulphatis, ʒ j, Tincturæ hyoscyamami, ʒ ij, —— cardamomi c. ʒ iij, Aquæ menth. p. ad ℥ vj. ℞. Cochlearia ampla duo bis quotidie sumenda. Four drachms of sulphate of magnesia may be substituted for the sulphate of potass.

of copaiba in this disease, especially after an injection of nitrate of silver, I was led to test its properties, and having begun with it I resolved to go on in the same path and try cubebs also. In both cases the results were extremely unsatisfactory. Many of the patients too, who applied to me, had experienced a relapse in the spermatorrhœa from a gonorrhœa, for the cure of which they had taken copaiba, without finding any relief to the emissions; and as I have had ample proof that many cases in which it was prescribed for spermatorrhœa, after cauterizing the urethra, were not in the least influenced by either remedy, I quite gave up copaiba.

I have been requested to try the grey nicker-nut, the guilandina bondicella I believe of Linnæus, in this complaint. After a long search I was not able to find that it had ever yet done good in a single instance; and as I have the strongest objection to experiments which offer no feasible prospect of success, I made none here. I should have thought that the yellow nicker-nut, guilandina bonduc, long used for gonorrhœa and convulsions, would be more likely to prove serviceable. As to the tar-water, turpentine, and sulphur-waters, recommended by Lallemand and Kaula, I have no experience of them.

External Applications: (*a.*) *Bathing.*—Foremost among these stands bathing of the genital organs with cold water every night before going to bed, which is often particularly serviceable when the patient is young and the attack recent. In mild cases, and in cold weather, it is generally sufficient to dash the water over the penis and testicles till they are well braced up, but in more severe forms of the disease farther means are often requisite. One very necessary precaution is, I find, rarely taken. Patients bathe, they say, with cold water, but they simply pour it over the scrotum and penis; just as often as not this process is of no use at all. The patient should use the largest sponge he can get, or a large piece of flannel, soak it in the water, and squeeze it over the upper part of the abdomen, so that the water may flow in quite a torrent over this region, and from thence pour down upon the genital organs. After this the perineum and rectum should be bathed till they feel quite chilled. The patient will very soon be conscious of a totally different result from this mode of using the application, to that which follows merely splashing a little cold water over the organs.

When the patient can procure them, or where expense is no object, sea-water, the solution of Tidman's sea-salt, or concentrated sea-water, may generally be substituted with advantage for fresh water of every kind. Patients, however, in whom the scrotum is tender or predisposed to eczema, must always be careful to dry the surface very effectually after using salt-water, as however well some persons may bear its application, others less happily constituted may suffer a good deal from irritation thus induced. In hot or very close weather, and especially if the scrotum be very relaxed, the temperature of the water must be materially reduced, otherwise little

benefit can be expected from the most prolonged use of it. Where ice can be procured, we have a very simple means at hand. A lump, say half a pound in weight, should be put into about a quart or three pints of water. When it is just dissolved the fluid may be used. Freezing mixtures, such as those produced by the rapid solution of nitrate of potass and hydrochlorate of ammonia, are useful; but as it is rather a costly process to abstract heat from a large quantity of water in this way, the patient should limit the amount of the latter to something like a pint and a half, and purchase the salts at some grocer's or wholesale house, as those which the chemists use are too fine and expensive for such work. The patient should put at least two or three ounces of each salt into two quarts of water, stir the whole briskly with his hand, and then place the water he is going to use, in a very thin vessel, in this solution, and as soon as he can ascertain by the touch that it is cold, bathe with it. If robust and indifferent to the smarting and tenderness it may occasion, I see no objection to his putting the salts direct into the fluid he is going to use for his local bath; but it is not every patient who can stand this. When the back of the head feels hot it should also be sponged, as should the adjoining portion of the spine, or one of Chapman's ice-bags may be applied. Evaporating lotions to both regions suit some patients very well. I give below a formula[1] which I have used with benefit.[2]

And yet it is a fact that, even in quite young patients, cold bathing will, time after time, bring on an emission, and that scalding the perineum, particularly when there is a good deal of irritation in the back part of the urethra, is often highly beneficial. How it happens that such opposite agencies act so much in the same way, I confess myself as unable to explain as I am to pronounce at the outset which case will be benefited by heat and which by cold. When the former is found desirable, a good method of applying it is to take a small, angular-shaped sponge, which is put into very hot water, hooked out with a wire, and placed upon a cane-bottomed chair, beneath which a basin or slop-pail is placed; the patient then sits lightly down upon the sponge, which ought to be so hot that he cannot bear the contact of it with the perineum for more than a few seconds. M. Trousseau, though he prefers the employment of cold when there is torpidity of the parts, recommends hot applications, such as bags of hot sand to the perineum, when the excitability is augmented. He also resorts to hot hip-baths. For the cases mentioned above as benefited by warmth such means are valuable, but I would restrict their use to these complications; and I believe that the influence of either heat or cold bathing over emissions is more limited than many persons suppose.

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[1] ℞ Spir. ætheris, ʒ vj, Liq. ammon. acet. ℥ iss, Mist. camph. ad ℥ viii. ℿ. fiat lotio.

[2] In very severe cases Moriggia uses the hunger cure, and preludes it with very free application of cold to the cerebro-spinal axis and head.

With regard to the cold hip-bath, or sitz-bath as it is sometimes called, I have totally lost faith in it. I have known patients carry the use of it to such an absurd extent, that I fancy my readers would scarcely credit the accounts I have heard, without gaining any benefit whatever; indeed I have sometimes wondered that serious consequences had not ensued. Mr. Thomas Leeds says,[1] "the genito-urinary tract is strengthened through the stimulation of its capillaries and nerve fibres. In those, indeed, who are weakened through sexual excesses, there is no remedy of equal value to the sitz-bath, 45°, for fifteen minutes, twice a day." Into the theoretical part of the question I shall not enter. Mr. Leeds, being a lecturer on physiology, doubtless treats it in strictly orthodox style, in which style I beg to say, speaking purely of what is called the science of physiology and not in any way personally, there is a great deal of assertion but little removed from what we hear of in fortune-telling and prophecy; as a matter of clinical experience I must oppose the statement to the utmost. I have repeatedly found the urethra, under the operation of this kind of bath, become so congested that passing an ordinary bougie in the most gentle way would bring on copious bleeding. And though Mr. Leeds, after an elaborate explanation of why it should be so, tells us that a series of sitz-baths will completely unload a congested liver, I have never seen anything from it but aggravation of this disorder when complicating spermatorrhœa; and whenever I have found the liver congested in these patients the urethra has been in a similar condition. The plunge-bath, especially when it can be procured cold, as at the old Roman bath near the Strand, when the patient has not to walk too far either before or after it, and when he feels braced and stronger for the use of it, is a better remedy. I need scarcely say that a dip in the sea, particularly in early summer before the great heats have set in, or in autumn when the heat is declining, is preferable to any plunge-bath, but with the same reservations. When languor, coldness, headache, giddiness, a bluish tinge of the complexion, a feeling of not being well, or a sensation of sinking follow, it is likely to do far more harm than good. Swimming should never be prolonged to such an extent as to bring on fatigue, pallor, and chilliness. The reader must remember that it is an exhausting exercise, and that anything like exhaustion will more than counteract the good effects of the bathing. Indeed, according to my experience, cold bathing in the morning, however suitable for hygienic purposes, and for mild and recent cases of spermatorrhœa, often exercises, when the disease has reached an advanced stage, less control than is expected from it. Above all things I wish to caution the reader not to trust it too far at this period. As a means of preventing the discharges it is not unfrequently only of service when employed just before going to bed, and even

[1] Manchester Medical and Surgical Reports, vol. ii. p. 38.

at that hour may be useless or injurious should there be great local irritation. In winter the morning cold bath is, as a rule, hurtful, especially for delicate persons, who do much better on a hot bath.

(*b.*) *Sleeping cool.*—Sleeping with the organs cool possesses greater control over emissions than almost any form of bathing; indeed I believe there is a degree of cold at which they never take place. Whether the patient can and will support it is another thing. I cannot, however, too strongly insist on the necessity for his trying to do so. In my opinion he ought to lie, winter and summer, with the window open, and the parts as lightly covered as possible. In severe cases I often advise the patient to sleep on the floor. With a view of avoiding cold, he may wrap up the rest of the body, neck, and head, as warmly as he likes. Wearing an old pair of trousers with the front part cut away, and sleeping outside the bed-clothes, will often prevent an emission. Too great a weight of bed-clothes is particularly injurious, and however strange it may seem, it is quite certain that many persons, who escape tolerably well during the great heats of summer, begin to suffer again so soon as ever thick blankets are laid upon the bed, although they are not so hot as they were in the summer months. Again, the class of patients, suffering from spermatorrhœa, seen at hospitals, is almost exclusively composed of artisans who work, and only too often sleep, in warm rooms; while tramps, who are exposed to great inclemency, seldom complain of this disorder. The practice of wearing a totally unnecessary amount of clothing, especially in the shape of that rubbish which is known by the inappropriate name of under-linen, and of sitting in hot rooms with door and window closed, if not so potent for mischief as sleeping too warm, still can do and does no good. Dr. Beard looks upon[1] the increased sensitiveness to cold seen in the brain-working classes of America as evidence of the growing power of nervousness; but I should be inclined to say that it is the baneful practice of over-heating both the body and the house it dwells in which generates the nervousness.

(*c.*) *Pressure.*—One horrible remedy, very justly condemned by Lallemand, used at one time to be revived every three or four years after he published his treatise. It consisted of an expensive instrument which, whatever form it might assume, was constructed for the purpose of applying pressure to the urethra, in order to prevent the escape of the semen, which of course would flow back into the bladder. M. Kaula gives[2] some details which quite justify the strong expression just used, and cases of very severe suffering induced by this machine have come under my care. One patient brought me a large disk of hard wood, which was pressed into the perinæum by means of a ⊤ bandage, the transverse belt going round

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[1] American Nervousness, its Philosophy and Treatment, p. 2.

[2] Op. citat. p. 233.

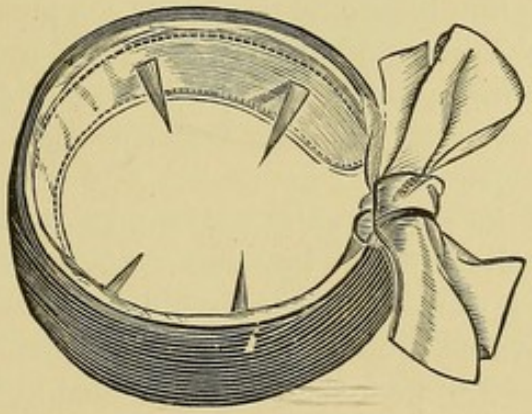
the waist; this process of torture had materially increased the emissions. Another described to me a complicated machine for securing pressure on the lower part of the urethra, which the surgeon who devised it called a "jugum," and which, though more elaborate than the other, proved in respect to the chief point only on a par with it, both of them being utterly useless. I believe, however, most of these things have now gone out of fashion. M. Trousseau, who according to his own account borrowed the idea from a quack, uses a stem pessary which may compress the ejaculatory ducts, though I have failed to see that it does so. The foot is fixed to the stalk supporting the body, in such a way that it forms an angle of 75°, which is turned towards the perineum, and one of 125°, which goes towards the coccyx. This is oiled, introduced up the rectum, and worn almost constantly. The first patient on whom he employed this instrument was suffering from "absolute impotence" as well as involuntary emissions; the dates are slightly doubtful, but as I read M. Trousseau's narrative, the patient was entirely cured in twenty-nine days.[1] Since then he has often seen very rebellious cases yield in a few days (!) to the use of this instrument.[2] Along with this, however, M. Trousseau cups over the loins, applies over the same part lotions of tincture of iodine, and a thick woollen stuff impregnated with embrocation of essence of turpentine, over which a very hot iron is passed,[3] nor does he hesitate, in suitable cases, to employ moxas and flying cauteries. In one case forcible dilatation of the anus produced excellent results.

Early in the summer of 1873, a gentleman, who had some little time previously gone to Paris in order to consult M. Trousseau, placed himself under my care; he had used the stem pessary, which he brought with him, and which he said had done him a great deal of good. He had been induced to try it from finding that he could not take any of the medicines usually recommended for emissions; the instrument, which was very much like the rectum pessary used for piles, except that the globe of it was larger, was evidently made of gilt metal. Interested by the patient's account, I resolved to give the instrument a fair trial. I had at that time some very rebellious cases under my care, and of these I selected five. The pessaries used were exactly of the same shape as that of M. Trousseau, but were made of the same material as bougies; they were however nearly as smooth and hard as metal. Not one of the patients benefited by the use of them. One of them complained severely of the pain occasioned by the instrument, and a smaller one was tried, but it exerted equally little control over the discharges. One gentleman, a surgeon, was obliged to have this instrument altered, as the foot of it pressed too hard upon the perineum, and this was also the case with the patient who first recommended it to me. This difficulty was got over by

[1] Op. citat, vol. iii. p. 470. [2] Ibid. p. 472. [3] Ibid. p. 468.

doing away with the external slip or foot, and substituting a strip of silk cord passed lengthwise through the pessary; but by this time the successive failures had quite disheartened me, and M. Trousseau's patient brought matters to a climax by saying, of his own accord, that he was quite satisfied that the treatment which I had recommended him (principally injections) had been of far more service; thus out of six cases only one could be said to have benefited by the pessary, and that one by his own account but very slightly.

(*d.*) *The urethral Ring.*—This is to my thinking a much safer and better remedy. One kind, "the four-pointed," consists simply of a leather ring armed with points, and so fitted with the points turned inwards on the penis as to produce no uneasiness till erection comes on, when the patient, roused by the pricking, can jump out of bed and thus arrest an impending emission. However sharp these points may be filed they scarcely ever pierce the skin, as the merest approach to puncture awakens the sleeper. Now and then an over-tired patient will fall asleep, and not feel that his skin is being punctured till he is awakened by an emission, but I have never known any troublesome consequences follow this.



Four-Pointed Urethral Ring.

The engraving represents the ring as it is tied on the penis, the skin of which the points should all but touch. Should they be too sharp the patient can easily file the tips down. Now and then it happens that a patient cannot keep this ring on the penis; the remedy is to have one made deeper, with a double row of points, bent a little so as to face each other and thus prevent slipping; a method which I have adopted on several occasions with complete success.

The reader must have seen the effects of this little instrument in order to appreciate its value. It is scarcely overrating the control it exerts over some forms of spermatorrhœa to say that a resolute patient can, with its assistance, almost set the disorder at defiance. The first case I treated with it was one of the worst I ever saw. The patient, a remarkably strong-built man, assured me that for nearly eighteen months he had

never passed a night without an emission, and that he was driven nearly mad with them. He looked the very picture of despondency, called nearly every day, though I told him that such a proceeding was far more likely to aggravate the excitement, and generally wrote a long letter after each visit, describing his symptoms, and begging of me to investigate the case. He complained bitterly of an alarming and intolerable feeling in the back of his head, as if there were a heavy weight inside the skull, and a sense of soreness like that which would have arisen from hitting it with a hammer. Ice to the occiput, mild and brisk aperients, digitalin, etc., were prescribed, but all failed to give any relief. I therefore resolved to try the ring, with the power of which I was then scarcely acquainted. It acted, however, almost like a charm; the emissions yielded with extraordinary rapidity, and at the expiration of quite seven or eight years had never returned. Since then I have employed it in hundreds of cases, and can safely say that, properly used, it has rarely disappointed me, that is to say in actively assisting the operation of other remedies.

But it must be properly used. There must be no mistake about this, Unless the patient is sufficiently resolute to submit to having his rest broken, any measure of this kind will be inoperative. So soon as ever the pricking awakens him he should rise, untie the tape, bathe the organs with cold water till the erection subsides, and replace the ring. This is not very pleasant work, especially when the weather is cold, or the patient wearied or out of sorts; but it is very efficacious, and that is of a great deal more consequence. If the patient find that he begins to untie the ring in his sleep, he should substitute for the tapes a hook and eye, secured by a small padlock. The key should be tied to a piece of bright colored ribbon, with a view to its being easily found when wanted; and it should, after locking on the ring, be placed just out of reach, so that the patient must get up to open the padlock. Should the patient be taking camphor, a dose once or twice in the night, when he is roused in this way, is often serviceable.

Some persons are of such an irritable temperament, so easily fidgeted, to use a common but expressive word, that they cannot bear this instrument. They have a constant tendency to erections when in bed, and they complain that the pricking keeps them awake all night through. In these cases the toothed ring answers better.[1] It is made of very thin watch-spring covered with silk, and is so constructed, that while the penis is in a quiescent state, the points (A) lie outside (B) and do not come in contact with the skin; but so soon as a certain degree of erection occurs, it opens the ring out, and the teeth are brought sharply to bear upon the nearest point of the skin, as shown in the engraving, and thus speedily produce such a pricking as to warn the patient of his danger.

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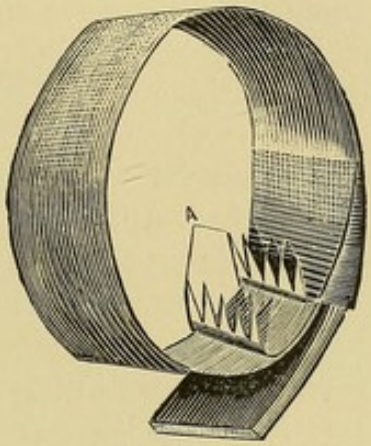
[1] Both these rings can be had of Messrs. F. Walters & Co., 29 Moorgate Street.

The reader is however to understand that, though the ring will prevent emissions, it will in many cases not check the disposition to them; that it does not in any way cure the morbid state of the urethra, and that merely stopping the discharges will often not restore the strength local or general. To be thoroughly efficient, the use of such an instrument must be conjoined with that of tonics and injections. Patients are often startled to find that they have an emission even with the ring on. This may possibly depend on seminal plethora, or the beginning of that loss of sensation which is apt to set in when the disorder has been running on for a considerable time; however, so far from constituting any objection



Toothed Urethral Ring.

to the use of the ring, such an occurrence is one of the very reasons why it should be worn, as it gives unmistakeable notice that a state of matters is drawing on which admits of no delay.

A patient who had suffered martyrdom from this affection, and who had tried both kinds of rings without obtaining much relief, as the emissions continued to occur either without any warning, or so suddenly that he was unable to avert them by rising, informed me that he had used the following method with great benefit. He had a very fine ring made of thin steel, and fitting to the circumference of the penis at the part where it was applied; the points were so arranged as to be just clear of the skin when the organ was in a state of quiescence. The ring, however, instead of being worn on the body of the penis, was worn behind the glans and underneath the foreskin. Mr. Walters has invented a ring which he considers in some respects superior to both the others. It consists of a circle of german silver, with the edges turned at right angles and cut in projecting teeth. Attached to the inside of this is a light circular steel-spring ring, smaller in size than those just described, by means of which the instrument is kept in position. A very slight enlargement of the penis opens the steel ring, thus bringing the skin into contact with the teeth.

One writer has condemned the use of this ring as unscientific. I should scarcely have thought that a rational being would have made use of such an argument, and I should not have noticed it if it had not afforded me an opportunity of answering other objections and other questions. I confess, therefore, once for all, that I both use—and recommend others to use—remedies of which I cannot in any way explain the action. When I have, to the best of my judgment, thoroughly tested a medicine or an instrument, I employ it without any regard to theories; and if a means of preventing human suffering is to be rejected because it is unscientific, then I say, quite deliberately, that the sooner science is done away with and empiricism adopted in its stead, the better for the patients. The same writer has so completely succeeded in confusing himself, that his readers would imagine I had recommended this ring for preventing masturbation. I never did any thing of the kind; it would be useless for such an object.

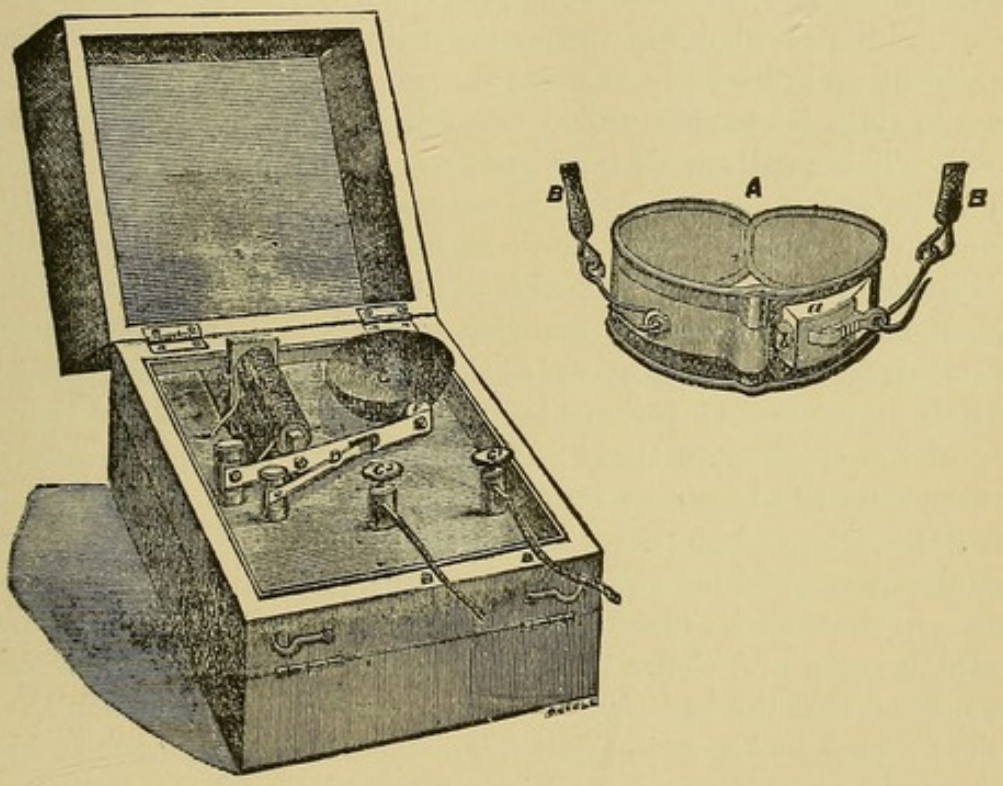
The Cavaliere Giuseppe Tenderini was kind enough to send me a pamphlet[1] printed from a paper read, April 7th, 1871, before the Medico-physical Society of Florence, containing an account of an instrument (the Cintolo Avvisatore), devised for the same purpose, made of leather and fastening with a button, which appears to have succeeded very well in his hands. Professor Ferdinando Zannetti remarked at the meeting that the use of such instruments had long been known; but, as the author observed, and he spoke from trials, these carried out the idea very rudely and imperfectly; they fastened with a clasp like a bracelet; the material of which they were formed was rigid; they gave unnecessary pain and were difficult to loosen, so that patients got alarmed at the prospect of not being able to free themselves from such an incumbrance; objections which the author of the paper seems to have overcome in the ring which he has invented. As the pamphlet is not accompanied by any engravings, I am unable to say whether Cavaliere Tenderini's ring is superior to those I have recommended.

(*e.*) *The electric Alarum.*—But the most ingenious instrument of this kind that I have seen is the electrical apparatus figured in the annexed engraving, the invention of the same gentleman (for it is no discovery of mine) who devised the toothed urethral ring, and who had himself been suffering from spermatorrhœa. The principle of it is that a ring placed on the penis is so made, that when expanded by erection it completes an electric circuit and so rings a small alarm bell placed under the sleeper's pillow, which speedily rouses him, however deep his slumbers may be. I own that when the idea was first mentioned to me I felt incredulous. It seemed impracticable that an erection could be made to sound the watch-

[1] Di un semplice Apparecchio per impedire le Perdite seminali involontarie. Noto del Dott. Gius. Tenderini.

word of alarm; but when the patient explained the working model he had constructed I saw at once that the instrument might be made a means of benefit; I am afraid, however, that the cost (five pounds) will always deter the majority of patients from employing it.

The instrument consists of a ring (A), which is hinged for the purpose of keeping the circuit open when the organ is quiescent. Upon the ring is a flat plate of ivory (*a*), furnished with a bolt (*b*), which, upon erection, is pushed backwards so as to complete the circuit at this point. With the ring and bolt are connected two insulated wires (B, B), which convey the current to two binding screws (C1, C2). Of these C1 is in communication with one of two metal slips placed below the frame on



which the screws rest. C2 communicates with the back spring of the break (D), and thus through the wires surrounding the electro-magnet (E), by means of a second slip of metal, with the other element of the battery. The battery is, as the reader will infer, placed below the frame, and consists of a small square carbon trough, within which is a square zinc plate lying beneath another carbon plate of the same size. Electricity is disengaged by the agency of sulphate of mercury. From the zinc plate a pin passes through the carbon plate, and comes in contact with one of the metal slips mentioned above; the other metal slip simply presses on the carbon plate to make contact. On the circuit being completed by the pushing back of the bolt (*b*), the hammer (F) strikes the bell (G). But so soon as this takes place the current is broken at the point (D), and in consequence the hammer recedes. As it does so it re-estab-

lishes the circuit, and as a result the hammer is again propelled against the bell. Thus the ringing continues so long as the ring remains on.

The ring can be widened at will by letting out a pin, and the machine is so arranged that the box containing the electric bell can be placed under the pillow of the sleeper. The note, too, given out by the bell may be made very low, or loud and shrill, according to the patient's pleasure.

So far as I know this apparatus has only been tried by five persons. The first was the inventor himself; he, I believe, derived great benefit from it. The second patient really did not require it, and speedily abandoned its use. The third patient, a surgeon, tried it thoroughly. The first obstacle he encountered was that the bell, shrill as its note is, failed to awaken him. He then arranged for one of his relatives, who however knew nothing of what was the matter with him or why the alarum was used, to sit up in his room at night and rouse him so soon as ever the bell began to ring; he was also called twice during the night whether it rang or not. This gentleman's experience was that the alarum was really of use. The emissions were to some extent warded off, and his health improved in the interval, though there had been a change for the better in both before he had began with the alarum. It sometimes failed to awaken him, even when an emission took place. On one occasion he computed, from the observations of the attendant and himself, that there was only an interval of perhaps twenty to thirty seconds from the beginning of the erection to that of the emission, or else the erection must have continued to increase after the emission had begun, which seemed to him impossible, and at that time seemed doubtful to me, though I have since then seen good reason to believe that such a thing occasionally happens. In practice he found that the cords twisted and broke, however careful he was, and that a three-strand silver wire answered better; he also noticed that the best cloth for the purpose is flannel which has been washed a good deal so as to thicken it,—this retains the mercury without letting a quantity of water get between the plate and the cloth, as happened with the first cloth used; it should be well wetted, but not sufficient to let much escape. The zinc plate must be scraped every day, as rubbing only coats it with mercury. The next patient also reported that the battery demanded a good deal of time and trouble, and that the wires got kinked and cracked; that he had sometimes been roused as much as six or seven times in two hours by the constant ringing; that unless the ring was very delicately adjusted, which was another term for perpetual disturbance of sleep, it acted no better than the spiked ring ; and finally that no one could bear always being robbed of sleep. The fifth patient soon got tired of the alarum.

Two years after the tenth edition of this work, containing a full account of the alarum, appeared, M. Minière described [1] one essentially the

[1] Bulletin général de Thérapeutique, 1877, p. 500.

same in principle, and M. Verneuil communicated [1] the particulars of a case treated by means of this apparatus. The case had resisted all ordinary modes of treatment for fourteen years, and would, according to M. Verneuil, have ended in imbecility and death had it gone on; it was, however, perfectly cured by means of the alarum. M. Tillaux supplements [2] this with the history of a most severe case treated in the same way. The emissions occurred almost every night and sometimes twice or thrice in a night, yet the alarum soon effected such an alteration that there was an arrest of them for quite three weeks. The story, however, breaks off abruptly, and is too incomplete for the purposes of evidence.

In some persons in whom an unfortunate tendency to emissions during sleep is strongly developed by lying on the back or the face, it is necessary to employ mechanical means, so as to make it impossible for them to rest in either position. A very simple way of ensuring this is to have two pieces of boxwood, carved with three or four projections sharp enough to cause considerable uneasiness when pressed against the skin, fixed, with the projections turned inwards, to the inside of the belt of a suspensory bandage, one facing the spine and the other the linea alba. No patient, however sleepy and wearied he may be, can long bear the discomfort occasioned by this implement. For those who have contracted the baneful habit of masturbation when half asleep and half awake, often men who would shrink with horror from the idea when in full possession of their senses, Mr. Walters has, at my suggestion, constructed a light wire cage, which the patient can fasten on with a small padlock; as in order to remove it he must rise to get at the key, he has time to become aware of what he is going to do. Some patients have reported that the cage gives warning of an impending emission quite as well as the urethral ring. Blistering the penis with some strong ointment, such as that of the red iodide of mercury, has been recommended in these cases, and I have myself had recourse to it; but it is a clumsy and barbarous method compared to the cage: it makes the patient sore, lame, and uncomfortable in the daytime, and as it cannot be continued for an indefinite period, generally has to be given up before he is effectively weaned from his destructive habits.

(*f.*) *Blistering.*—In some cases a blister is one of the most useful means of cure we possess. Notwithstanding the strong opinion M. Lallemand has pronounced on the subject, I have no hesitation in asserting, even in opposition to him, after the numerous trials I have given it, that if some proper medium, as blistering tissue, be used, no strangury, or *exaspération effrayante* of spermatorrhœa, however severe the case may be, need ever be feared. I attach equally little weight to the more

[1] Bulletins et Mémoires de la Société de Chirurgie de Paris, 1877, p. 298.
[2] Ibid. p. 535.

modern objections. As I have now employed blisters for many years in gleet and spermatorrhœa, I may be allowed to speak somewhat decidedly. The only ill effect I have ever seen from them was occasionally a small number of boils, and this may generally be averted by dressing the blistered surface with cotton-wool, instead of any ointments. Some patients have voluntarily carried the practice of blistering to an extent that would hardly be credited. One gentleman, who had for years been tormented by irritable bladder and gleet, of his own accord blistered the penis and perineum together upwards of twenty times, with the best results. He had been for nearly a year and a half a perfect victim to these symptoms. His bladder was so irritable, that often the mere act of stooping sufficed to make it expel part of its contents; he told me that he durst not enter society, or go to any place which he could not leave when he liked. The irritability of the bladder in this case appeared to be simply an extension of this action from the membranous part of the urethra, which at last, under the action of the blistering, threw off a long narrow strip of gray tenacious mucus, quite hard, and looking like a slough. Another still more resolute, under the direction of a surgeon in Ireland, applied thirty, with the effect of reducing a most obstinate vesicular gleet to a slight and occasional escape of mucus. A third carried blistering quite as far as in the second case; and I know of many instances in which patients have resorted twelve or fourteen times to this means. Perhaps no remedy produces such a deep-seated and gratifying feeling of strength and release from that indefinable sense of constraint and irritation in the organs, of which these patients often complain, as a blister. Moreover, if the following directions be literally carried out the inconvenience is made very endurable.

A piece of paper is 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 on the blistering tissue, which is cut out by it, wrapped round the penis with the greasy side next the skin, and fastened with thread, or two rings of vulcanized india-rubber cut very thin with scissors. The patient should keep it on till a blister rises, and remain perfectly quiet during the time it is on, lest any motion bring the blister against the scrotum and vesicate the skin; but he must not apply it on going to bed, as he will most likely fall asleep and not awake until the penis is one mass of vesications,—a state productive of an unnecessary amount of suffering. In the milder cases, or where the skin is tender, an hour or an hour and a half will be sufficient. The blister is then removed, and if there be any vesicated spots they are punctured and covered with a layer of cotton-wool, bound over these with a small piece of linen kept on by a thread, or the rings spoken of above. When a severer case renders a more energetic employment of the remedy necessary, it must be kept on two to four hours until free vesication is produced; a white-bread poultice or two may then

be applied, and afterwards, if there be a good deal of smarting, benzoated zinc or white elder ointment spread on linen. It is, however, better to do without ointments if possible. Any patient may make a poultice for this purpose, by putting the inside of a French roll into a slop-basin and pouring a little boiling water over it; the water is drained off at the lapse of two or three minutes, and a little unsalted butter or lard added; an old linen handkerchief will serve to put it in. To protect the penis from friction, a T-bandage, with a linen bag sewn into the part which receives the penis, or a handkerchief carried round the waist and dipping in front so as to hold the penis and keep it up against the abdomen, is necessary.

A very good method of blistering the perineum is to apply Bullin's blistering fluid, or the liquor epispasticus of the British pharmacopœia (which, however, I believe to be an inferior preparation, though of course more orthodox), by means of a camel's-hair pencil.[1] 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. The patient should hold the scrotum well up and brush the whole surface between it and the anus. He then waits quite ten minutes, and, should there be no sign of heat or pain, repeats the process; usually this is enough, but three or even four applications may be required, and in one patient repeated applications of it even failed to vesicate, only a slight degree of soreness being occasioned. If on the contrary he feel the part beginning to tingle, he has done enough. 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, consisting of a sock rolled up, or something of about the same bulk, is then fastened to the part next the blistered surface, and on this is laid the lint with the ointment, which it serves to retain in its place; or Walters's mocmain bandage, with triangular pad, made expressly for these cases, can be used. A very convenient substitute for either is made by bending a card in the length three corner-wise, like the roof of a child's toy house, and stitching the free edges together, the ends being left open. This is filled tight with cotton wool, covered with soft rag of any kind, and placed, with the ridge of the roof upwards, next the lint or linen smeared with the ointment, the bandage finally passing over the base of the pad. 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.

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[1] Some persons have the skin of the penis so tough that it is necessary to use it for this part also.

Direct Applications:—(*a*). *Cauterizing the Urethra.*—Although the application of nitrate of silver to the urethra is a perfectly safe and often a most valuable remedy if suitably used, and particularly when resorted to in order to aid other treatment, yet its employment, by means of M. Lallemand's instrument, as a specific—and there can be no doubt that it has been and still is so used in the vast majority of cases—was never likely to do anything but mischief. It was at one time evidently considered almost if not quite infallible; I suppose, however, its pretensions in that way have gone the same road as those of so many specifics. Those who are themselves infallible, who set down as cured every patient who does not return with an unfavorable account of the results of the operation, and who refuse to hear the unfavorable account when the patient comes with it, may give a different verdict; but a dispassionate examination will, I think, quite confirm what I have often said—namely, that under any circumstances the nitrate often fails; and how M. Lallemand, by a single application of it, contrived to cure cases which had reached the stage of melancholy, homicidal mania, and impotence, is one of the things I have never been able to understand. It might be said that I am prejudiced against cauterizing, and cannot give a fair opinion, as I never use it uncombined; but I have been consulted in quite a sufficient number of cases where the nitrate alone had been employed by other surgeons without doing any good, to satisfy me that this is a very frequent result. Of course I was not consulted by those who had been cured.

However, many practitioners continue to have great faith in it. Mr. Solly, for instance, who used to apply it very gently and merely over the openings of the ejaculatory tubes, says[1] that it will, in conjunction with iron, quinine, and zinc, effect a cure "even in cases where the testicles have shrunk to little more than the thickness of a penny piece and the varicose veins resemble a bag of worms." Of its safety there can be no doubt when it is properly employed. Lallemand used it for twenty years, and even cauterized the lower part of the bladder, without any untoward result. Mr. Curling says, "In no instance has any harm resulted from the application of the caustic;" and Mr. Phillips, in one of his answers to me, says it never produced injurious results in his hands, though his experience extends over many hundred cases.

We might suppose that some part of this was owing to the excellent surgery of those who employed it. M. Lallemand did not allow the caustic to remain an instant longer in contact than was absolutely necessary. "I cannot," he says, "protest too strongly against those who give a fixed period (*une durèe quelconque*) for the action of the caustic, and measure it off by the watch. Even to look at the dial takes too long a time;" and Mr. Curling attributes the absence of severe symptoms, in the cases where

[1] Lancet, 1858, vol. i. p. 134.

he has used it, to his having applied it still more gently. But Mr. Phillips, though he has seen some discomfort caused by it, has rarely heard of any complaint on the patient's part; the pain on passing urine is "very bearable," although he uses the caustic very freely. "I have never applied," he says, "too much caustic, but I have more than once failed by using too little." Had any severe symptoms occurred, Mr. Phillips would, we may rest assured, neither have overlooked nor suppressed the mention of them. All that is left us is frankly to admit that in his cases no harm resulted from the application of the caustic. M. Lallemand, however, has seen severe retention of the urine, hæmorrhage, and intense pains, which only yielded after a long time, and it seems that stricture has also followed; Dr. Humphry speaks of a good deal of irritation, pain with frequent bloody micturition, and some discharge following the operation, with perhaps seminal emissions at night. Sir Henry Thompson[1] found that caustic, however carefully used, produced hemorrhage, retention, or inflammation, unless absolute rest was enforced; Dr. Golding Bird says[2] he has seen most disastrous results from over-free application of the nitrate, and that in one case the operation brought on cystitis and thus placed the patient's life in danger. Mr. Gascoyen has known[3] two persons die from the effects of the *porte caustique*; Dr. Hammond has "seen violent inflammation of the urethra, stricture, orchitis, epididymitis, and cystitis produced by it;" and Dr. Durkee says[4] that "severe retention of urine, hemorrhage, and the most excruciating agony, and even stricture, have been produced by the *porte caustique*." A surgeon, who had been cauterized by a gentleman standing deservedly high in professional estimation, told me that the pain lasted quite three months.

My own experience quite confirms all this. However carefully caustic may be employed, hemorrhage and excessive pain on making water will sometimes follow. Patients have told me that the agony of attempting to pass water, after this operation had been performed by very experienced surgeons, was so great that they were compelled to desist. In many cases it has been found necessary to give powerful sedatives or inject almond oil along the urethra, before the patient could attempt to empty the bladder. Shiverings, in some cases of such severity as to confine the patient to his bed, have also ensued; generally, however, this result has only been noticed in cold snowy weather. Retention of urine I have not seen after the operation, unless stricture was also present, when I have witnessed it, and also relieved it by the simple process of passing a gum-elastic bougie.

On the whole I can only conclude that in many cases it will, if trusted to alone, prove inert when applied so mildly as to cause no pain; and

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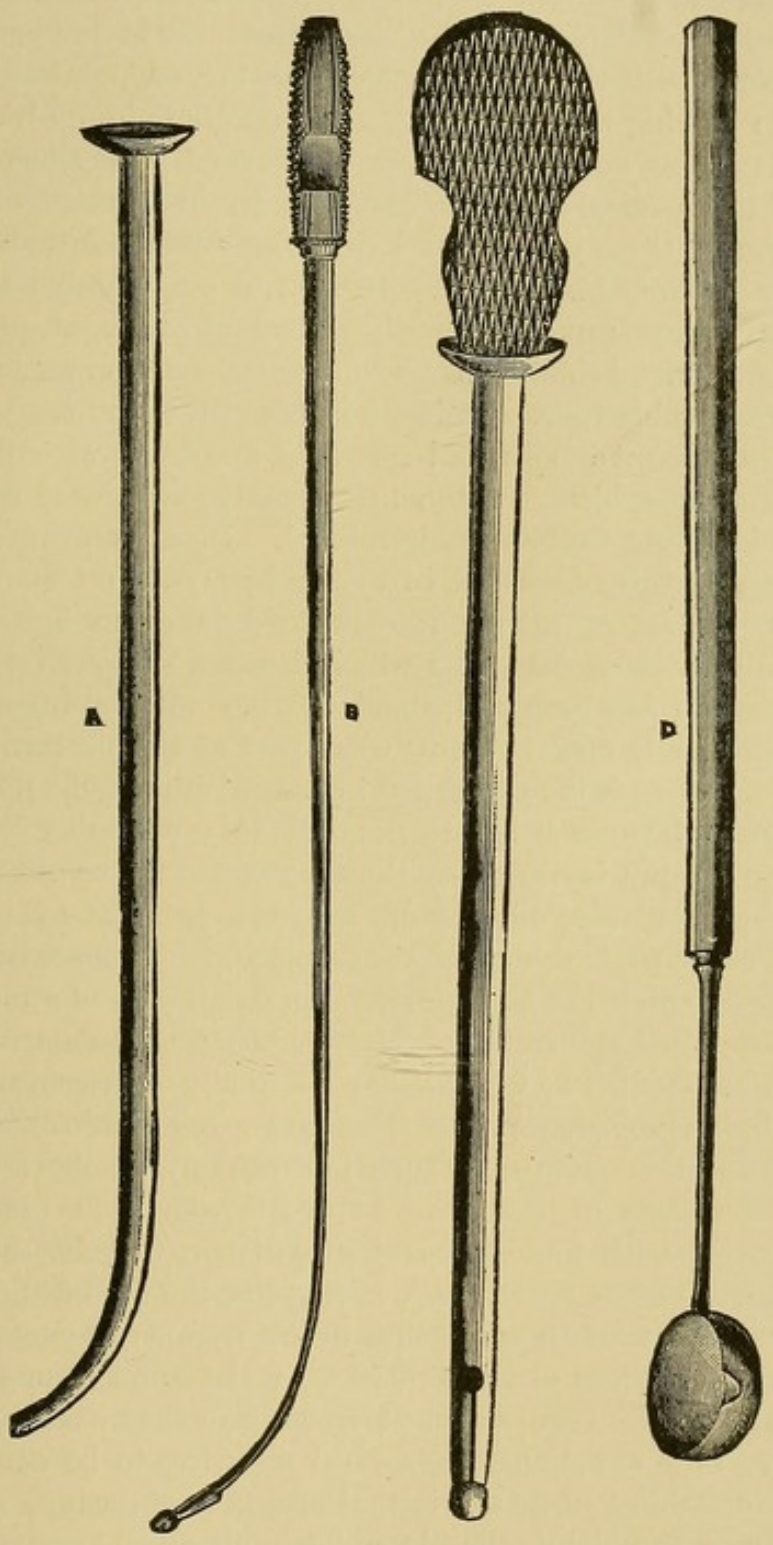
[1] Lancet, 1852, vol. i. p. 89. [2] On Urinary Deposits, 1857, p. 379.
[3] British Medical Journal, 1872, vol. i. p. 96. [4] Op. citat. p. 136.

that when used to such an extent as to produce a curative effect, a certain amount of suffering must be looked for. I am well aware that this view is totally opposed not only to the opinions, but also the experience, of many able surgeons; that the treatment by caustic was matured and tested in a most extensive practice for many years; that Lallemand, with unusual success, lived to see his treatment universally adopted as the great panacea for the disease. Still I cannot help thinking that it is a by-path, and that under the shadow of a great name much has been said that will hardly stand the test of criticism. Nor is this a judgment formed solely upon my own experience. Several surgeons have told me that they have been consulted by so many patients who had been cauterized in vain, and that they had themselves employed the caustic with so little result, that they had almost given up using it. Now these were not patients who had been handled by bunglers in the art—by men who had employed the caustic unskillfully and rashly; on the contrary, they had been under the care of first-class surgeons in this specialty. Some of them, after having bid their surgeons good-bye, the cure being in the opinion of both complete, had endured the mortification of seeing the worst symptoms return. Beyond all question, some part of this may be attributed to the total want of a systematic course of treatment by medicine; for even granting the value of caustic in most instances, it is far better, in order not to lose any part of its effect, first of all to set right, as far as we can, any derangements in the other functions, and this can only be done by carrying out a fixed plan of treatment.

I have long given up Lallemand's instrument, convinced by ample experience that it is, to the best of my judgment, inferior to my own, which I have now long used without ever seeing much in the way of severe symptoms follow. It consists, as seen in the engraving, of a platinum or silver slightly-curved canula (A), and a stylet (B). It is about the length of an ordinary catheter, and in gauge about midway between numbers 9 and 10. For patients suffering under a certain amount of stricture, or affected with congenital narrowness of the opening of this canal, I employ an instrument not more than number 7 gauge. The instrument, closed, as in the drawing of the smaller instrument (C)[1] used when there is stricture of the anterior part of the urethra, is well oiled, and then passed down to the prostatic portion of the urethra, or to any part that is extremely tender, and the stylet being withdrawn, a small flexible bougie, armed by dipping the tip into caustic fused in the ladle (D), is introduced by the canula and drawn lightly over the urethra for an inch or two. It is then drawn back within the canula, so that, in removing

[1] In the engravings the larger instrument is reduced one-half, and the smaller one a fourth. The drawing of the ladle is of the actual size. The instruments can be procured from Messrs. F. Walters and Co., Moorgate Street.

it, the anterior part of the urethra is not cauterized. By this means only a very small amount of caustic is applied, every part is touched with which it is necessary that the nitrate should come in contact, while the



risk of giving excessive pain, and the disagreeable sensation produced by the rotation of Lallemand's instrument, are avoided. It has also the advantage that the instrument cannot be grasped by an irritable urethra

and held till all the caustic is dissolved out, as occurred once to me. A still more unpleasant circumstance happened in the hands of Dr. Humphry. The part carrying the caustic gave way when he was cauterizing a gentleman, leaving the end of the instrument and the caustic in the patient's prostate. Fortunately for the patient the loose piece of instrument was voided with the urine on the following day, and though some unnecessary suffering was occasioned, no ill effects followed.[1]

There is nothing new under the sun! Several years since Mr. Wade exhibited at the Medical Society of London an instrument of the same construction, and three years prior Mr. J. Z. Laurence introduced to the same Society a similar instrument. In 1854, a considerable time before either of these events, some months after I had, as I thought, perfected my caustic holder, a friend showed me one on the same principle, which he had had for a considerable time. On looking into Hunter on the Venereal,[2] I found the instrument again; and not long after met with it in an old work on the same subject, written in the early part of last century, the title of which I have unfortunately mislaid. In cases complicated with gleet the cage bougie, described in a work by myself on gonorrhœa,[3] in which a small piece of nitrate is embedded in cacao butter, confined within a small platinum cage from which it oozes, answers very well.

After so much has been said about the best kind of instrument, the reader will naturally seek to know what part of the urethra it is to act upon, and how often it is to be called into requisition. To the first part of the question the answer is very simple. In my opinion the prostatic region of the urethra is essentially the part that must be attacked. The orifices of the ejaculatory ducts must be reached. There is pathological evidence to show that the mischief is principally concentrated round their openings, which are sometimes in an enlarged and abraded condition.[4] The continual recurrence of the statement among patients, after the nitrate has been applied here, that they now really feel that the seat of the disease has been reached, would of itself be good ground for the practice; but I can in addition confidently turn to the results of the treatment itself for confirmation of the view. Patients who have been injected, blistered, treated with tonics, and strictly dieted, without such a degree of improvement as was anticipated, have, after the use of the caustic in this way, noticed a marked subsidence in the number of emissions within a few weeks, sometimes even at once. At the same time I wish most distinctly to warn the reader against trusting to the nitrate as a specific. It is not so. It is simply one of several measures to be employed, and the excuse for calling in its aid is that spermatorrhœa is so complicated and refractory a complaint, that in my opinion every avenue against its encroachments ought to be barricaded with the most scrupulous care.

[1] Holmes's System of Surgery, vol. iv. p. 605. [2] Op. citat. Plate III.
[3] Page 248. [4] Curling, Op. citat. p. 457.

Most probably the reader will have already conjectured that this applies to cases which are not complicated with gleet, stricture, tender patches in the urethra, etc., and it is so. For such complications the application of the nitrate to the affected spot may or not be required; and in speaking of the restriction of it to the prostate, I am assuming either that such symptoms never existed or that they have been subdued.

More care is required to answer the second part of the question. At first the nitrate should be passed very gently, and unless some unusual symptoms, such as great persistence, rapid recurrence of the emissions, or prevalence of head symptoms impel the surgeon to step out of his way, the application should never be renewed till not only the irritation set up by it has, so far as the symptoms enable him to judge, entirely subsided, but till the surgeon has satisfied himself, by passing the bougie, that no particular swelling of that part of the urethra remains. Days after the patient's sensations have ceased to warn him that the urethra still felt the effects of the salt, and when I have been positively assured that the canal was quite in a state to bear another cauterizing, I have, on passing the bougie, found that it was still too swollen, and sometimes also too tender, to make it probable that the application would be beneficial or even safe. In my judgment, therefore, the surgeon should, in mild cases, only employ the nitrate very occasionally and at intervals of quite two or three weeks. In more severe cases he may use it more frequently, say once a week, beyond which it is rarely necessary to go; but in every instance he should, in the earlier stages of the treatment, satisfy himself previously, by means of the bougie, that the canal is clear and not too sensitive. When a number 8 or 9 bougie will enter easily and without pain into the bladder, the caustic may at once be used. Later on this precaution is not so necessary, and the reason would seem to be this: The cases which in practice call for this remedy are those in which the urethra is in a slightly inflamed and irritable state, much the same as the conjunctiva after ophthalmia, and as little amenable to general means only; at first, in the one case as in the other, the nitrate brings on congestion, but as the membrane gets firmer the disposition to this passes off, and the same application, which at first causes almost occlusion of the passage, ceases to call forth any perceptible effect.

(*b.*) *Injections.*—Experience has convinced me that injections should always precede cauterization, and that unless stricture is present, they render any resort to the solid nitrate superfluous in at least four cases out of five, if not far more; while in every instance they so effectually reduce any irritability of the canal, that, when recourse must be had to caustic, this can be applied without setting up anything beyond a slight and perfectly bearable degree of smarting. Irrespective of their control over the emissions, this quality of removing abnormal sensitiveness renders injections highly valuable, often indispensable, in the treatment of spermator-

rhœa; but useful as they are, I cannot too pointedly warn the practitioner against trusting to them to the exclusion of constitutional means. The cure, when they are alone relied on, is uncertain, and relapses are frequent, whatever may be said to the contrary. The disposition which has long prevailed of looking on spermatorrhœa as a purely local affection, and the cause of all the weakness, languor, indisposition to rise and attend to either business or relaxation; of the feeling of indifference to all going on about the patient; of the prostration and dyspepsia, has given injections an unmerited reputation, and led some men to think them as much specifics as others do caustic. My experience induces me at once to say, that those who rely on any measures of the kind, must expect to reap only disappointment in a large proportion of their cases. Generally in spermatorrhœa there is evidence to show that the health is deteriorated; and even when this has arisen solely or chiefly from the exhaustion and irritation brought on by the emissions, the removal of these will not set the health right. I know that a widely different opinion prevails, but I can confidently appeal, not only to my own experience, but to that of any impartial person who has tried both methods. Used as an accessory to suitable treatment injections are often valuable, but I should never think of trusting to them uncombined; even the strong injections used by Mr. Acton, which occasioned in some patients pain for quite a week after, constantly failed in this object.

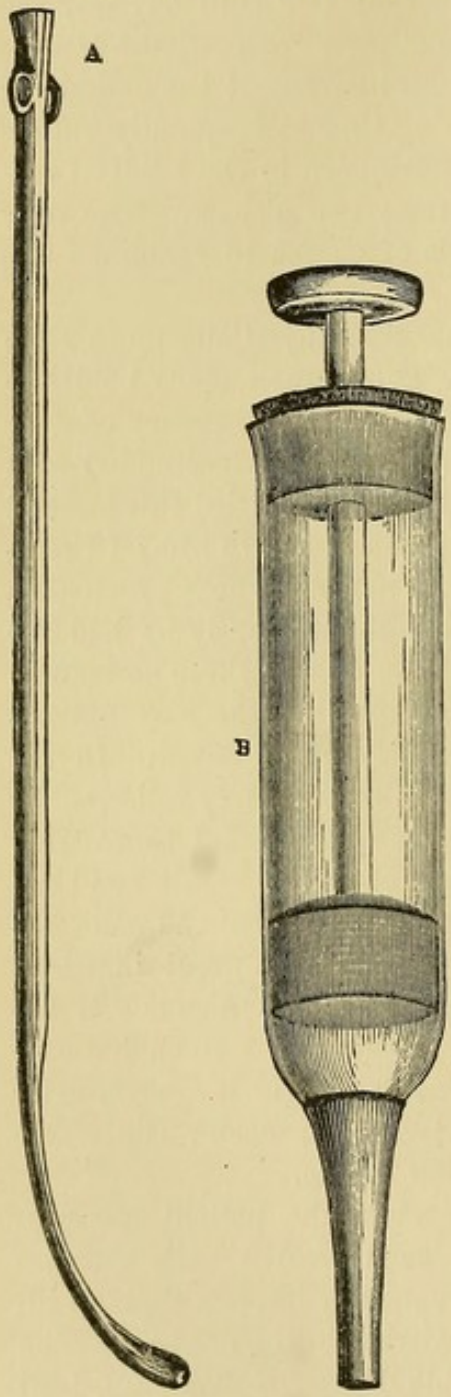
As much depends upon the proper use of injections, I have only to say that, after making trial of solutions of different salts, I have met with results which justify me in placing most reliance on the nitrate of silver. In my hands it has certainly proved superior to any other substance, and after balancing what I have read and what has been communicated to me, I feel warranted in saying, that it is the best material for this purpose; and that I have seen enough in the way of failures from injecting such substances as sulphate of copper, chloride of zinc and iodine to justify me in recommending the nitrate as far more reliable. The strength of the solution to be used, and the extent to which injecting must be carried, are both matters of vital importance to success. As a rule, the first injections should not exceed a quarter to half a grain of the salt to an ounce of distilled water. Some persons are extremely susceptible to the action of nitrate of silver, and a strength like that given above will be quite enough to set up heat and smarting for twenty or thirty minutes; I have been obliged exceptionally, to reduce the standard to an eighth of a grain. From this time forward, however, the strength of the solution may be steadily increased, but the rate at which this is done must be left to the discretion of the surgeon. Some patients continue most sensitive to the action of the nitrate up to the end of the course, and with them the increase in strength must be very gradual indeed. I have sometimes not been able to carry it beyond a grain and a half to two grains. In other

cases the urethra seems so insensible to pain that, after a few injections, a strength of even forty or forty-five grains to the ounce elicits no complaint. Nor is there anything in the physique and constitution of patients which can be relied on as a guide here. A strong, healthy-looking countryman will sometimes wince under a strength which is borne with ease by a pale, delicate person. I do not say that this is in any way the rule, but that it sometimes happens. Sometimes, with whatever care they may be given, injections will bring on an increase of the emissions; and when used late in the afternoon or evening they so frequently induce a discharge the same night, that for years I have been in the habit of recommending patients never to inject later than two o'clock. The only way to meet the first of these contingencies is of course to renounce the use of the syringe for the time being.

Till about eight years ago I scarcely ever used injections more than three times a month, but since then I have gone much more boldly to work, and now constantly direct the patient, after a preliminary trial or two, to inject every second day, an advance which has been attended with the most gratifying results. The first patient on whom I tried this method was suffering most severely, and time was a great object to him; I therefore decided to inject him every second day, a method which procured a pause in the emissions of forty-nine days, though previously he had for long never gone a week without having at least two or three emissions. Although he had one or two slight relapses after this, the case did exceedingly well, and he left England apparently quite cured. In the second case, also a bad one, the same plan was immediately followed by a break of thirty-five days, and the patient got quickly and thoroughly well with scarcely a check. In several other cases the result has been equally successful; in two or three others not so much so, the solid nitrate being required; yet taken altogether I consider it a great improvement upon the old system. When the patient lives at a distance it becomes necessary to instruct him in the use of the syringe. In such a case a little preliminary practice with the gum-elastic bougie is useful, after which, any patient possessed of ordinary dexterity can master the whole process of injecting in one or two lessons, often in one.

In some persons, but more particularly when the patient has previously suffered from gonorrhœa, which had been treated with specifics and injections with a short syringe, it will frequently happen that an injection of only an eighth of a grain of silver nitrate to the ounce, or even of distilled water only, occasions a considerable degree of smarting, heat on making water, and even a certain amount of purulent discharge; and I have known patients so alarmed at this, as to suppose that the operation had brought back the gonorrhœal running, or was so severe in its nature as to be totally unsuited to the case. But such symptoms are the best evidence as to the value of injections in these cases, for they indi-

cate a state of the urethra which would neither get well of itself, nor admit of being set right by medicines alone, while it would materially interfere with the cure of the spermatorrhœa. As to the dread which so many patients entertain about injections causing stricture, and which is immediately called into play by the symptoms just spoken of, it may at once be disposed of as groundless; there being no reason to believe that injections properly given, ever yet caused, or even aggravated stricture.



To my thinking the best form of syringe is one with a detached tube like that shown in the engraving (A); it is much more easily introduced than when the latter is fixed to the nozzle. The opening by which the fluid passes into the urethra should be at the tip (*c*), and the tube should be sufficiently thick from the shoulder (*d*) to the rings to fill up the urethra, and slope from the shoulders to near the tip, in order, so far as is practicable, to imprison any fluid forced forwards. This escape is to some extent prevented by the tip itself bulging out into a pea-like form. The nozzle of the syringe (B) is covered with a silver sheath (E), so that it may easily be fitted tightly into the tube.[1] Syringes of the ordinary kind, perforated at the sides, or catheters with syringes attached, are not nearly so useful or well adapted for bringing the injection principally in contact with the part of the urethra intended to be acted on. The mode of using the syringe is as follows:—The tube is introduced into the membranous part of the urethra, the first selection of the part to be chiefly acted on, however, being determined by tenderness of the mucous membrane; the surgeon grasps the penis, firmly, low down; then the syringe, charged with two drachms of the solution of the required strength, is adjusted, and the piston is driven home, the syringe being withdrawn in proportion as it is emptied, so that no part of the urethra may be sub-

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

jected to much distending force. The fluid is retained till the patient begins to complain of a sense of burning and uneasiness, when it is withdrawn; a piece of thick lint is then fastened over the mouth of the urethra. Should any stains be occasioned by the nitrate, they are speedily removed by rubbing in a solution of bicyanide of mercury, a drachm to half an ounce of water, or by the use of Thomas's cyanogen soap. A patient, who had carefully studied the matter, told me, that he found he could inject better when the tube was first of all fitted to the syringe, and the same statement has been made by one or two others, but it does not accord with the experience of the majority.

Under the head of injections must be classed the application of caustic fluids by means of the ingenious instruments devised by Mr. Henry Smith[1] and Sir Henry Thompson[2] in which the distal end of a catheter, carrying a small sponge, saturated with solution of nitrate of silver, is made to protrude, and the fluid is brought into contact with the part of the urethra considered to be the seat of the disease. Both these gentlemen were, however, anticipated[3] by Mr. Guthrie. Mr. Erichsen uses a contrivance which he considers superior to either; in his instrument the sponge is retained within the catheter, and the fluid is made to exude by pressing a stylet against the sponge. I have not experimented with any of the three, and am therefore perhaps not qualified to speak on the subject; I may say, however, that both kinds of apparatus (for those of the two first-named gentlemen are so nearly alike that they may be spoken of as identical) seem to me a great deal better than Lallemand's, and that a concentrated solution of nitrate of silver is much better suited to many cases than the solid fused in a spoon. But at the same time I cannot see that in theory these instruments are in any way superior to those which I have recommended; and, judging by what their inventors say, it does not seem that greater success has attended the use of them. I have several times been consulted by patients on whom this method had been tried without the least benefit being derived; and as to M. Kaula's cures, in ten, fourteen, and twenty one days, with injections of opium, alum, etc., they are simply in flat conflict with my experience. Sir Henry Thompson and Mr. Smith seem to limit the use of the apparatus expressly to applying solution of nitrate of silver; while Mr. Erichsen not only employs this, but after he has used it for a time, resorts to tannate of glycerine.

As to the strength of the fluid used by these gentlemen, and the amount of suffering induced by the operation, I find so little stated in detail that I can only offer some vague conjectures. If I have in any way misrepresented their practice and the results of it, this has simply happened because I have not been able to make out any more of the matter. I assume, however, that they apply a strong or even a concentrated

[1] Medical times and Gazette, 1852, vol. i. p. 170. [2] Lancet, 1852, vol. i. p. 89.
[3] Anatomy and Diseases of the Urinary and Sexual Organs, 1843, p. 82.

solution of nitrate of silver at the first visit; and my experience of such a proceeding is that, by whatever instrument it may be effected, it will cause most severe pain, a grave, indeed almost prohibitory, objection in the eyes of many patients. Granted that a few men do not care much what torture they undergo so long as treatment is shortened, they are, after all, exceptions. The great majority dread suffering; and I do not see how strong solutions can ever be applied without giving a great deal of pain, unless we begin with very mild ones, and gradually increase the strength. I have said that it is prohibitory, and I believe it to be so. Certainly no surgeon ought to perform an operation likely to induce great suffering without first of all stating the real circumstances of the case to his patient; it is a breach of good faith to do so. For all these reasons I think the plan which I have recommended is preferable, and I believe I am justified in saying that it has found greater favor with the medical public.

(*c.*) *Galvanism.*—The application of any form of electricity to the organs of generation must, I suppose, rank in the same category as the means just discussed. I am not in any way sure, but I believe the merit of employing galvanism for this complaint, in England, belongs to Dr. Henry Dick.[1] Dr. Julius Althaus, who has investigated the therapeutic powers of electricity with a care and perseverance worthy of the highest praise, states in the second edition of his work [2] that he has found galvanism of the prostatic portion of the urethra useful in bad spermatorrhœa. In the third edition he again tells us [3] that in cases of spermatorrhœa, and in chronic inflammation of the prostate, the application of the continuous current to the prostatic portion of the urethra is often followed by excellent results. He recommends that the negative pole only should act on the urethra, the circle being closed by placing a moistened sponge, connected with the positive pole, to the groin. Where "hypochondriasis is connected with imaginary or real disease of the sexual organs (sexual hypochondriasis, spermatorrhœa, impotency)," he tells us [4] that the best plan is to produce catelectrotonus, and to combine galvanization of the sexual organs with the application of the current to the nervous centres. Farther on in the same edition [5] he gives us a case of bad spermatorrhœa cured by applying the cathode of fifteen cells for two minutes on the veru montanum by means of an insulated metallic conductor, the anode being placed on the perineum; and tells us, apparently quoting from Mr. Curling, that galvanization of the prostatic part of the urethra may likewise be employed in this complaint.

I do not know whether it is from paucity of material, from a desire not to overload his work, or because he thinks the subject of little mo-

[1] Gleet: its Pathology and Treatment, 1858, p. 14.
[2] A Treatise on Medical Electricity, 1870, p. 623.
[3] Ibid. 1873, p. 343. [4] Ibid. p. 501. [5] Ibid. p. 671.

ment, that Dr. Althaus gives us such meagre details. Judging from what is laid before the reader, it would really seem as if he had only treated a single case in this way, for the one which he relates dates as far back as 1868, two years before the second edition, and five years before the third edition of his work. He gives us no summary of his experience, he alludes specifically to no other instance showing the beneficial working of electricity, and what there is of experience seems to be principally drawn from Mr. Curling's work.

M. Emile Neumann gives [1] a case of emissions cured by the constant current. They were so frequent that they occurred not only every night, but several times each night (!) and by day also; but the application of the negative pole to the sacro-lumbar region, and of the positive to the perineum, daily for three or four minutes, in three weeks removed the day pollutions, and in five weeks had reduced the nightly discharges to one a week. After this the current was only used three times a week, with the result that a cure was effected by sixty-eight applications, only one relapse occurring. M. Mallez, too, who so completely ignores the prevalent view of this disease that he has laid down [2] for it a most elaborate system of investigation, including among other steps testing the patient's strength by the dynamometer, and exploration of the anus and prostate, and a still more elaborate treatment, recommends the descending current down the whole length of the spinal cord for eight or ten days, at the end of which time the current is to be reversed, so that I presume the process is kept up till a cure is effected. But however well such a mode of treatment may work in France, it certainly could not be adopted in England, as young patients here have neither the requisite time nor means at command.

For my part I quite despair of seeing electricity in its present form applied generally to the cure of this affection. As a remedy for impotence I am disposed now to think it of value, but in spermatorrhœa we have very different circumstances to deal with. Many of these patients are young and scattered about the provinces, and can neither afford the time nor the money for such a purpose. Even those to whom money is no object often cannnot come to London and stay till an improvement has been effected. To use galvanism at home necessitates a sound practical knowledge of the subject, and this is certainly quite exceptional; besides, the mere appearance of the machine is apt to draw forth questions which the patient is most anxious to avoid. The necessity for cleaning and refreshing every kind of battery, and the noise occasioned by the magneto-electric machine, are equally grave objections. As to being galvanized by professional men in the country, the difficulty is

[1] Gazette Médicale de Paris, 1879, p. 433.

[2] Le Mouvement Médical, June 14, 1873. Quoted in the Practitioner, vol. xi. p. 129.

almost if not quite as great. Many of them do not care to treat a case in this way, and others have not a good battery at command. Finally, we have to deal with the prejudices of patients against electricity. I proposed to a number of persons in succession to have the parts galvanized, and of these only twelve consented. Two of them lived at a distance. The first of them I instructed in the way of applying the electrode to the perineum. He borrowed an electro-magnetic machine from a chemist, and finding that it require to be turned by an assistant, sent it back without using it. The second, a surgeon, though urgently pressed to make a trial, always promised but never performed. In six cases I applied the galvanism myself. The apparatus employed was a hundred-celled Becker-Muirhead battery, with large conducting wires. One sponge was sometimes pressed upon, and sometimes passed along the perineum, while the other was slowly carried over the mesial line, from the lower end of the middle third of the sternum to near the navel, during the first part of the sitting, and over the spine in the second part. The number of cells used was determined by the sensation caused, being never carried farther than enough to induce a bearable amount of pricking. All these patients went through a complete course. One of them attended nearly every second day for quite three months. Not the slightest benefit ensued in any instance. Two were tried very carefully, and for a long time, with the magnet apparatus, but were just as unsuccessful; as were also two others, who used what they were told by the maker was a modification of Smee's battery.

Dr. George Beard, one of the most truthful men possible, and an enthusiastic student of the therapeutic effects of electricity, told me that the failures here were due to the process not having been continued long enough; and that galvanism, if properly employed and kept up for a sufficient length of time, always did good; but on my asking if he had ever seen a bad case of spermatorrhœa really cured in this way, he had none to bring forward. A physician, who had lived with another enthusiastic apostle of electricity, said the latter had described it to him as a specific in these cases, and honestly believed it to be such; but here too when I asked specifically if he had ever known a single bad case cured in this way, ever even heard of one, he at once admitted that he had not. Such facts show the necessity of what I have always contended for, the separation of certainty from uncertainty. There was no question here in either case of the truthfulness or ability of the observer, yet the observation first made was in both instances most misleading.

As to the other favorite modes of taking electricity, that is to say by means of Pulvermacher's chains and electric baths, my experience has been equally unsatisfactory. Of the many patients who had tried the first before consulting me, not one ever reported a sign of improvement. Several had given it a fair trial; some of them had worn two or three, and

one as many as five belts for months together. As to the second, my experience is more limited, but not in any degree more flattering; one of the patients, who refused to have the constant current applied, took quite four or five dozen electric baths without being in any way benefited. But there is still more unfavorable evidence about galvanism in this complaint. A patient who was very attentive to his case while under my care, and who seemed a perfectly truthful person, told me that he consulted a surgeon for this complaint, who recommended galvanism, and, on the patient consenting, introduced an electrode into the posterior part of the urethra. On the circuit being completed by pressing the sponge on the sacrum, a discharge of blood from the urethra took place, which so startled and alarmed the patient, that he got out of the house as fast as he could. Another patient, who was galvanized by his medical attendant under precisely similar circumstances, the electrode being introduced, as well as I could make out, into the prostatic part of the urethra, informed me, that directly the circuit was completed an emission occurred. I am therefore afraid that the difficulties which surround the use of galvanism and the evidences of its non-success are prohibitory in a large majority of cases.

It may conduce to a clear understanding of what I have found the most useful plan of treatment, if I now give in as concise a form as I can the outcome of these scattered observations. Supposing then that complications, such as indigestion, which are likely to interfere with the use of medicines necessary for the cure, have been overcome, I would recommend that in every case, unless there should be such weakness as to call for quinine, steel be given in moderate doses, to be increased as fast as may be to at least a drachm three times a day. It is to be accompanied by an aperient pill and camphor or nepenthe at bed-time, the latter being only taken when an emission is expected, and given up so soon as one ensues. The operation of the steel is to be aided by the use of the urethral ring, sleeping cool, cold bathing in suitable cases, proper diet, and moderation in exercise. Out of fifty cases so treated perhaps five-and-twenty will be cured by these means; of the remaining twenty-five about fifteen more will require and be cured by bougies and injections, while in the remainder these means must be followed up by the solid nitrate. In addition to either, or both, blistering must be resorted to in some few cases. Digitalin and sedatives are required for excitement and sleeplessness. Ergot of rye to be used after course of steel. Benefit from other remedies very problematical as regards cure of emissions. Each complication to be treated as directed under its special heading.

Diet.—In all forms of spermatorrhœa the diet ought to be plain but nourishing. The worst cases have always seemed to be benefited by a full meat diet, and it is not uncommon to find that a patient has starved himself to check the disorder and has aggravated it by doing so; indeed,

my opinion is that there must be few persons to whom such a plan is suited, as I have not seen one who had reaped any good from the attempt. Some of the most refractory cases I have ever seen were those of men who had tried this method, and had gradually so lowered their diet that, though it would support life and a certain degree of health, it was totally unfitted to maintain the body in a condition to resist the inroads of disease. Patients often tell us that they are "extremely careful about their diet," which generally means, when they are young, healthy men, that they are a vast deal too careful. One patient assured me that he had restricted himself to six ounces of roast meat and three small slices of bread daily. He literally ate nothing more, he said, and drank only water, never touching butter, milk, tea, sugar, wine, etc. He evidently plumed himself upon his abstemiousness, and seemed perfectly disgusted at hearing it spoken of as little, if any, better than insanity, and being told that a young healthy man, so long as he lived like a rational being and avoided things well known to be indigestible, might eat and drink anything he liked. Systematic starvation may be carried on for a great part of a life time with impunity, when the constitution is originally good and there is no great strain put upon it; rejecting all such very suspicious stories as those about Cornaro, there is yet testimony enough to show that many people have lived in this way and reached a fair old age. Whether they were really as strong as if they had eaten and drunk after the ordinary fashion, is another and a different question, one indeed which was never fairly tried, the subjects of the experiment having, without exception, been persons leading a quiet and very idle life. But the system breaks down at once under the tax imposed upon the frame by the exigencies of even ordinary labor.

We can at once estimate the importance of proper nutrition of the frame when we contrast the well-fed navigator, sailor, and engine-driver, with the wretched farm-laborer of the south of England; when we compare the yeomen of Cumberland with the starved peasantry of Kent and Wiltshire, or contrast the English boating-man, the prize-fighter, the fox-hunter, with the under-fed artisans of Bethnal-green. In both cases we see, on the one hand, an exuberance of rude health and strength, and on the other, men, sprung from the same race, sinking into helpless, ill-grown creatures; unable to do a quarter of the work a well-fed navvy can do; prematurely old and crippled, as stunted in mind as in body, and an utter disgrace to the country.

I now proceed, from dealing with general principles, to give a few particular rules. As the space at my command for this purpose is very limited, it will perhaps be as well to warn the reader that these directions must necessarily be brief, but that if he wish for it, he will find a more full account of the subject in the "Hygiène of the Skin." But brief as they may be, I trust they will be found of practical value, and better

suited to a work like this than an elaborate inquiry into the composition of our food and the chemistry of digestion would be.

When I say that spermatorrhœa patients generally require a meat diet, I do not mean an excessive amount of meat, or even an undue preponderance of it over other necessary articles of food such as bread, vegetables, etc.; but such a quantity as will keep the body in sound robust health, which, I should say, ought rarely, if ever, to be less than half a pound and not exceed a pound daily. It is perfectly certain that a great many persons eat a vast deal too much of it, and without reaping the benefit they expect from doing so. Such men as navigators, sailors, engine-drivers, laborers at the iron-works, etc., toiling hard in the open air, or in spacious well-ventilated factories and workshops, can naturally enough consume, with impunity, a much larger amount than a man tied to his desk and hardly breathing the fresh air more than once a week. But these men do not always get such a quantity as is commonly believed; most of them are liable, from the nature of their occupation and their improvident habits, to find themselves often placed upon very short commons. Perhaps the persons who eat most meat are the men-servants in rich families, and certainly the results of this diet in them are anything but encouraging, as I believe that, with the exception of draymen, few persons stand injuries and surgical operations worse than these men do, and that they rarely live to be very old.

The dinner should consist of meat and vegetables with bread. It is a point of great importance that the meat should be as tender as possible; a great mistake is made in cooking it so newly killed that it must be tough. Soda should be added to the water in which vegetables are boiled, and they ought to be always boiled till they are thoroughly softened. The water should then be got rid of by straining and heat till they are quite dry. The neglect of these simple precautions is one of the greatest faults of English cookery, and one of the principal causes of indigestion after eating vegetables. Meat, if not more palatable, is much more digestible when simply roasted or boiled than made up into stews, etc., which do not agree with dyspeptic patients, and indeed, seldom fail to produce a very uncomfortable sense of distension, especially when malt liquor is taken at the same time; unpleasant eructations are also exceedingly apt to follow indulgence in the use of this dilute, seasoned food. Tissot's advice,[1] to avoid pork, rich paste, greasy things, cabbages, and pot-herbs, is peculiarly applicable to such cases. As to the choice of meat, I believe that is a matter of very little consequence so long as a grossly indigestible diet, such as one containing too much pork, pickles, salmon, and things of that kind, is avoided. I think there should be plenty and variety, and that whimsies of all sorts should be avoided. One patient expressed

[1] Onanism. Translated by A. Hume, M.D., 1771, p. 107.

his surprise that he should be getting steadily weaker, as he lived with great regularity, he said, and on the best of meat. I found, however, that his idea of this consisted in eating four large mutton chops daily, one with each meal, and that he never departed from this rule. Another carried his mania for having his meat underdone to such an excess, that he actually on one occasion, having invited some friends to supper, put before them, not an underdone, but a raw shoulder of mutton!

Although a good diet is useful in this complaint, it is, at the same time, indispensable that the patient should abstain from rich or concentrated meats, such as soups, jellies, and so on. I may seem paradoxical in condemning the most nourishing, as it is thought, of all food; but nourishment is that which is digested and assimilated. Jellies, essences of meat, and articles containing too much fat, or which are too heavy and tough, overtax the powers of digestion, and still more those of assimilation. After living on them for a very little time, the tongue becomes coated and tremulous, and the breath foul; constipation, thirst, and turbid state of the urine set in, accompanied by a dry and scurfy state of the skin, and wasting. The same sort of thing often happens from mixing really good things in an improper manner; such as the addition of a chop and a pint of milk to breakfast, of stout to port wine, of meat to tea and supper. Good living aids nutrition; these things, except in the case of some special exhaustion, manifestly impair it, and are therefore unsuitable.

Late hours for dining are either injurious or not beneficial. No patient suffering from spermatorrhœa should dine later than half-past five, and, if he can manage it, three or four o'clock is still better. Heavy suppers are worst of all,—they are positively suicidal. I have not the same faith in diet, especially in the minutiæ of diet, as many writers, but I have so often traced relapses or obstinacy of the complaint to this cause, that I speak rather confidently. To a light supper, when the patient must dine early, and especially when he suffers under much exhaustion, there is less objection; but even then I think a late tea, with the addition of something substantial, is better. Occasionally this is reported impracticable, on account of the patient being rendered incapable of sleeping by the exciting effect of tea; which usually means that he has got hold of some vile stuff sold as "best black," four-fifths of it bad Indian tea, out of which he has contrived to extract all the poison by letting it draw; a very unnecessary mistake, for the due rectification of which I refer him to the "Hygiène of the Skin." Sometimes everything of the kind must be given up, seeing that even a moderate amount of otherwise harmless fluid taken late in the evening will provoke an emission; a fact well known to Tissot and other old writers, who wisely insisted on complete abstinence at this time.

Good bread is one of the most important items of diet, as wheat contains within itself the three nitrogenized constituents of animal food—al-

bumen, fibrine, and caseine. Now, a great deal of the bread sold, not only in London but in the country, owing to the rejection of the bran in some cases, to the inferior quality of the wheat used in others, and to a conjunction of these two causes in a third set of cases, contains little more nourishment than would be derived from the same quantity of straw ground up, and even the whitest and finest bread is totally deficient in cerealin and phosphates. Nor does the best-made country bread contain these to such an extent as it ought, as a large proportion of the bran, in which they are found, is used for other purposes. For years past, therefore, I have been in the habit of recommending patients to use bread made with the flour prepared according to Chapman's patent by Messrs. Orlando Jones and Co., as one pound of it contains quite as much nourishment as a pound and three-quarters of ordinary bread, besides ingredients which are not to be found generally in any other bread wherever it may be made; and when this is impracticable, always to get the very best wheaten bread.

Another point of great importance is a proper choice as to quantity and quality of what the patient drinks. Red wine, especially claret, seems to answer best in these cases. I have repeatedly heard from patients that, even when using the same medicines as previously, they had noticed a very decided diminution in the emissions after taking to claret; in some rare instances this decline has amounted to quite one-third or even one-half of the number. In very cold weather a little port or Tarragona wine may be added to the claret. As to the quantity, I believe it is useless to expect any medicinal action from less than a bottle a day; the quality is a matter of very little moment, so long as the wine is pure and not sour. Sound vin ordinaire at a shilling a bottle is as useful, medically speaking, as the finest Lafitte. German burgundy is an excellent wine for this purpose; it has more body than claret, and seems to suit English palates better than French burgundy. And here I may remark that I am not judging in any way from reports on wines in medical journals, the scientific analysis of chemists, or the severely impartial details of facts in the pamphlets drawn up by wine-merchants. I have not the least doubt, that both these medical and chemical reports are most ably and conscientiously made; but I have also not the least doubt, that the wine sold to patients is often a very different product from that which elicited such extremely warm praise on the first mention of it. Scores of statements made by patients, and numerous trials with wines procured, unknown to the particular wine-merchant, have satisfied me on this head. In speaking of the value of red wines I am guided by the most careful study of the progress of cases under their influence, by the statements of the patients as to how they felt while taking them, and a fair comparison of the observations of these results with those obtained from examinations of patients taking port, sherry, claret, etc.

Red Sicilian wine seems to be an excellent astringent and tonic. It has the great advantage for those who are not over-stocked with money that it is, looking to the amount of healthy stimulant contained in it, one of the cheapest things that can be drunk. A very good way of taking this wine when its rather harsh taste proves an objection, is to mix with it a small quantity of some richer wine, such as new port or even Tarragona, or the better kind of Australian red wines; this method is particularly suited to winter, when wines like claret or red Sicilian are too cold for the stomach. In this case the wines to be used should be mixed in the proper proportion, and decanted off into bottles, each holding a day's consumption; if a bottle be opened frequently, wine of this quality is apt to get stale and then it nauseates the patient. I have long recommended this kind of mixture, and have every reason to believe that it is very useful; many persons who cannot take claret alone have found it, when fortified in this manner, suit them very well.

Spirits should as a rule be put under interdict, especially when taken hot; rum and gin are the worst of all. Whiskey, when it can be had pure and old, which is not often the case, is one of the least objectionable; cognac seems to agree with some persons. My attention was first called to it by a patient who told me that, whenever he drank a glass of cognac and water before going to bed he never had an emission; I have since followed up the observation, and am disposed to assign a certain amount of value to it. A gentleman who had read this in a former edition, told me that he could quite confirm it; he had two or three times, merely for the sake of trial, substituted hot whiskey or gin and water for cognac, and had each time an emission. Since then other persons have contributed similar testimony. Therefore, if a patient must take spirit, cognac is perhaps the best. The excessively high price, however, to which it has now risen, renders it almost unattainable for a great number of men. Rum mixed with milk is a valuable remedy when there is a good deal of exhaustion, as from neuralgia, for which it is the best remedy I am acquainted with, and often in impending impotence; but I have not found it agree so well with those suffering principally from emissions.

The breakfast is as important a meal as the dinner; it is indeed essential to health and strength. So far as regards the choice between tea and coffee, ham and eggs, cold roast meat and fish, etc., the patient may, once for all, decide as fancy or experience suggests, but he certainly wants something of the kind every day. I have heard a good deal urged against tea and coffee, especially the former, with the objections to which I have dealt at length in the "Hygiène of the Skin," and I have been astonished to learn from patients that medical men have told them there was a possibility of mischief occurring from their use.

I believe such objections, however, to be utterly unwarranted, and that tea and coffee are among the most precious gifts of Heaven; this, how-

ever, applies to these articles in a state of purity. Tea is seldom sold pure, but for that the grocer and merchant are not to blame. They have great difficulty in procuring it unadulterated; and when they do so they have still greater difficulty in finding customers who will give a proper price. Even rich persons object to pay a sum which a Russian or German in moderate circumstances would not hesitate at, and then complain of the deterioration that tea is undergoing. With coffee it is very different. A little care will always secure it pure, but so far as I can see very few persons will bestow even this little care on the matter. The coffee sold in London eating-houses and confectioners' shops is the worst in the world, worse even than that in Constantinople, as it is described in *The Innocents Abroad*. It is a black, nauseous, repulsive fluid, made still more unpalatable by the addition of the adulterated milk served up with it. Yet it is drunk daily without complaint or protest by persons who can afford to live well and always profess to do so.

I have been surprised to find how prevalent the use of cocoa and milk for breakfast is among these patients. As to the former, which many have vaunted to me as almost a specific against indigestion, I should feel inclined to act on a saying ascribed to the late Earl of Derby, and prefer the dyspepsia, but when patients like it there can be no particular objection to its use; it is, however, entirely wanting in the fine diffusible stimulant which is found in tea and coffee. Milk alone is a most unsuitable thing, especially for persons advanced in life and of sedentary habits, unless eaten with such substances as porridge, and even then is of very doubtful value.

Years ago I used often to come in contact with persons who breakfasted on beer; now I rarely hear of such a thing. Possibly the practice is dying out, and that is about the best thing that could happen to it. Breakfasting in this way might serve very well for those who are always ready to set up a cry about the superior diet and wisdom of our ancestors; it might suit the harmless lunatics who would, if they could, get up our young ladies on the model of Jane Grey, or Elizabeth Tudor, who

> "her breakfast would make
> Off a tankard of ale and a pound of beefsteak."

It might have been fitly patronized by an enthusiastic Tory forty or fifty years ago, who followed in the wake of the then famous Morgan O'Doherty, and made it a question of principle, almost of religion, to despise such weak nervous stuff as tea and coffee, because our ancestors drank only good beer; or the worthies who "flourish immortal" in Salmagundi and Bracebridge Hall. But the time for these mistakes is pretty well over. Our ancestors were neither so healthy nor so strong and cleanly as the present race, and the very indifferent beer which they drank, for it was really poor stuff compared with that made by good

brewers in the present day, could only have served to make them gouty, rheumatic, and dyspeptic. In that respect, at any rate, the "tymes of fadres old" have changed for the better.

Yet I have known men so far carried away by fancy as to say that they could not keep up their strength without breakfasting on beer and cold meat, though I never knew one who improved his health by the practice. One patient, who persisted in breakfasting thus and doing the same thing at tea-time, drinking quite a gallon a day of weak malt liquor, began at the end of about twenty months to show signs of considerable irritation of the kidneys, under which he speedily sank. After death, a largish calculus was found in the pelvis of the left kidney, which had destroyed a considerable portion of the organ. This patient had enjoyed very fair health up to the time of his perpetrating this freak. Another, a tall, powerful young fellow, a famous athlete, was kept to the house for months by lumbar pains, phosphates in the urine, etc., apparently from the very same thing.

Beer in the morning, particularly pale ale, is almost as bad; I could soon tire the reader by quoting instances of its mischievous effects. A gentleman, famous for his athletic achievements, persisted in this plan though I warned him of the effects; after two or three years' continuance, he began to suffer from great depression of spirits, pain in the back, a constant feeling of indisposition for any kind of work, mental or bodily, and loss of appetite. I found his urine loaded with phosphates, and this seemed to be the only clue to the mischief going on. I ordered him to leave off beer, and with excellent results; he soon improved, and said, when I last saw him, that he felt no inclination now to resume his old habit. Another, a very strong man, told me that he was suffering from nervousness, a complaint at which he had formerly laughed. I found that he took two or three glasses of pale ale between breakfast and lunch, and more than as many afterwards; he gave it up with the effect of complete recovery. Another patient, a man of excellent constitution, complained of being so giddy every morning between eleven and twelve o'clock, that he felt as if he must fall off his chair; he too had become so nervous that he had often to return home; he said that sometimes, when walking, if he attempted to set his foot down suddenly, a sensation came on as if his head must burst. He also drank pale ale every morning, and recovered entirely on leaving it off. A gentleman told me that for eighteen months he took five glasses of pale ale daily, touching no other stimulant whatever. During the whole of this time he never passed a fortnight without a sick headache; at last his suspicions fastening on the beer, he gave it up in favor of claret, and had never had any headache since. It is unnecessary to lengthen such a list, but I may conclude by pointing to one remarkable and interesting fact, and that is the diminution in the use of beer among the officers in India. Five-and-thirty or

forty years ago more than half the mess might be seen drinking beer; now the number is more like an eighth, and these almost invariably young beginners, the older officers having learnt by experience that light wine suits them a great deal better.

In emissions, all kinds of malt liquor act most injuriously. It is difficult to say which is the worst kind, but perhaps pale ale is. An impression has got abroad that it possesses some tonic power, and improves the appetite; indeed, spermatorrhœa patients often express their surprise that they should be getting constantly weaker and losing their relish for food, while taking two or three pints daily of such a powerful restorative. But whatever strengthening properties it may possess, I have never been able to detect them either here or in any other complaint, nor did I ever see an instance in which it improved the appetite; while its deleterious power of bringing on giddiness, excessive discharge of phosphates, languor, etc., will soon be apparent to any one who studies its action in spermatorrhœa patients. Sometimes, when there is great exhaustion, especially after an injury or acute illness, old bottled stout is useful for a few weeks, and that is the only malt liquor of which I have a good word to say.

I do not deny that any kind of beer may often be taken with impunity by men using violent exercise; as, for instance, glass-blowers, iron-workers, reapers, mowers, etc., who perspire enormously, and who most likely could only bear stimulants in a very dilute form. Very often, too, the same amount of pale ale which, taken daily in chambers, would be poison to a man at his desk, might rather do him good than harm after a hard row on the river, or a long walk to his fishing on a hot summer's day. I am quite ready to admit, also, that many men take beer for years without any injury to health; but the question which really concerns us here is, whether malt liquor suits patients suffering from seminal emissions, and my experience leads me to say emphatically that it does not. It is very possible that our ancestors, living a hard active life, hunting and campaigning, with very little brain work, stood this kind of thing better than we can, with our sedentary lives and over-taxed brains. But for good or for evil those times have passed to return no more, and we must let the dead bury their dead.

Smoking.—Patients constantly ask if they may smoke; and I suppose that, without going into the scientific reasons for and against smoking, we may always pretty safely reply that there is no great objection to it in moderation, and when really pure tobacco is used. The only danger is in the abuse; and in the contingency that, in the case of an attack of depression of spirits, the patient will sit at home smoking and brooding over his imaginary calamities instead of going into society. Now spermatorrhœa is essentially one of these complaints, in which it does not do for a man to be too much alone. Cheerful intellectual society is one of

the best preventives against the hypochondriacal, misanthropical feeling of which so many persons complain.

The efforts of Mr. Solly, Sir Benjamin Brodie, Mr. Lizars and others, to represent smoking as the most deleterious practice possible, the cause of national degeneracy and physical decay in our male population, of the prevalence of dyspepsia, nervousness, exhaustion, and shortness of life, however well meant, were, to say the least, extremely injudicious; for their statements teemed with assertions which the simplest observation showed to be unfounded, and therefore not at all likely to convince any but the most unreasoning of the lay population. They maintained that the average height of men had declined in this country, while the size of the old suits of armor shows that this is not the case; and when seeking to attribute the prevalence of nervous disorders and those of the stomach to smoking, they forgot that these complaints are common among women. Mr. Lizars wanted people to believe that smoking was fatal to ability and energy of character, whereas a list of the most able and energetic men of the last two centuries shows a large proportion of smokers. Again, Mr. Solly asserted that smoking interfered with longevity, but examples enough were brought forward to show that smokers often attain extreme old age; among many others were quoted that of Newton, who was a great smoker, and lived to be eighty-four, and of the famous Hobbes, who used to smoke thirteen "churchwarden" pipes every night, and who died at the age of ninety-one. He quoted, as a specimen of the infatuation induced by smoking, the case of a man who spent £300 a year in cigars, forgetting that at such an extravagant price as sixpence or eightpence for each cigar, he must have smoked from sixteen to twenty-two hours a day, without the least intermission, every day of the year. Sir Benjamin Brodie said that the mischief occasioned by smoking was caused by the empyreumatic oil of tobacco circulating through the blood, forgetting that it was first of all necessary to demonstrate such an extraordinary anomaly as that of an oil being taken up into the blood at all. Yet these strange statements passed for the most part uncontradicted. One journal even spoke of Mr. Lizars's pamphlet as "admirable," whereas I suppose it is one of the worst books ever written; bizarre and confusing in the arrangement, illogical in the reasoning, full of gross exaggerations, and abounding in bad taste and bad grammar. [1]

Exercise.—A patient suffering from this complaint should be out in the open air as much as possible, and take all the exercise he can without being wearied by it; but over-fatigue in any shape is a mistake, and means

[1] I quote one sentence, which is scarcely worse than the rest of this "admirable pamphlet." The parts in brackets and the notes of admiration are mine. "Query—If the ulceration [he does not say what ulceration] differs from carcinoma, a smoker runs [query, does a smoker run?] the risk of two diseases, viz.: carcinomatous sarcoma [!] and carcinomatous nicotianum?" [!]

courting a relapse. But while I at once admit the beneficial effects of exercise when properly pursued and resorted to in moderation, I am satisfied that most erroneous impressions prevail both with regard to the mode in which it should be pursued and the extent to which it may be carried. In itself it is so excellent a thing that every man instinctively feels the necessity for it in some shape or other, and rich and poor, young and old, must alike cultivate it or pay Nature's penalty for neglecting to do so.[1] It is the wrong mode of doing it and the over-doing it which constitute the mistake.

I am constantly asked what is the best kind of out-door exercise for those who can procure it. I believe any kind will do equally well so long as the following conditions are carried out:

1. That from its nature or immediate effects the patient can be induced to take an interest in it. 2. That there should be sufficient emulation excited by it to make it rather a passion than otherwise. 3. That it should not be carried to such an extent as to induce any exhaustion. 4. That it should not be of too expensive a nature; and 5. That the patient should not have to go too far to reach it. Taken all in all perhaps few recreations offer so many advantages combined as volunteering, which may be pursued nearly all the year round, and in all kinds of weather. There is plenty of room for emulation in it, and as in some of the regiments gymnastic sports are now cultivated, unusual opportunities for indulging in them are thus afforded. Riding is an admirable practice when the organs are not too excitable, but I need scarcely say that it is a vast deal too expensive for many young men. Like the other sports it should never be carried too far; fatigue in the saddle will only too often bring on an emission. Patients themselves often notice this; a gentleman who hunted every Saturday told me that he very frequently had a discharge on that night, and always when he came home very tired, while he had none at any other time. One patient reported that he always had an emission after a hard day's trout fishing; two or three others have told the same story about a long day's shooting. Cricket, I confess, I am rather afraid of in many of these cases, as I have so very often found that patients have had an emission after a fatiguing day at it, and the same may be said of boating. Indeed patients often find that they have to give up both because they cannot pursue them in moderation, and unless they do this they cannot get rid of spermatorrhœa. A famous Thames oarsman was under my care for this affection in a severe form, and expressed the greatest incredulity when I told him that, after maturely weighing all the circumstances of the case, I had come to the decision that his rowing feats were the principal cause of the disorder persisting so obstinately. But when once his attention had been called to the con-

[1] "Æque pauperibus prodest, locupletibus æque;
Æque neglectum, pueris senibusque nocebit."

nection between the two, he speedily came over to my view, and then, of course, rushed into the opposite extreme, giving up boating altogether, as he said there was no middle course for him. Bicycle riding in excess is often just as injurious.

Gymnastics have been much extolled in this complaint, and I at once admit that at one time I gave them credit for more controlling power than I now believe them to possess. When the case is mild and the patient strong, as also when he is throwing off the disorder, gymnastic exercise is often harmless as regards the spermatorrhœa, and beneficial to the health and spirits; but in bad cases it does nothing but mischief. One gentleman, who had expressed himself very confidently as to the power of gymnastics to cure his case, gave a totally different account some months later after ample trial of them. His disorder had got decidedly worse, an irritable feeling in the back, under which he had suffered, had now become aggravated; while he also complained of fatty stools, and a feeling when he rose from a chair as if fluid were escaping from the urethra, always a sign of a morbid state.

When the patient's avocation will not permit him to indulge in the pursuits just mentioned, he may still assist in the removal of many of his symptoms by rising early. Over and again a patient has noticed that getting up betimes, so soon as he awoke in fact, averted an emission which a longer stay in that bundle of paradoxes, the bed, would certainly have induced; while indulgence, even for a few minutes, had as constantly brought down on his head the penalty of a relapse, making him feel for a day or two after exactly as if he had committed some crime. When the patient feels adequate to it he can follow up with a cold sponge and a short walk, or a turn for a few minutes at the dumb-bells or Indian clubs. Usually he finds, after a while, that this self-denying system is doing him good; that he sleeps better, and that his muscles are growing firmer; that he takes a more hopeful view of his case, and feels more energetic and competent to pursue a proper course of treatment. But a long daily walk, dragging through the prescribed number of miles with the view of keeping up the health, and overcoming the effects of hours of confinement to the desk or shop, is perhaps the greatest mistake these patients commit; and I have over and over again found it out of my power to master the emissions till this exhausting system had been given up. Such a practice may suit those who are in health; I am speaking here of spermatorrhœa patients, and I say quite advisedly that a long daily walk will often undo the effects of any treatment. There is nothing to object against a good brisk walk on a cold or fine breezy day; the argument is directed solely against the monotonous treadmill work, which is so erroneously thought to be beneficial in these cases. A tour on foot not unusually proves even more mischievous, while I have never known it do good in a single instance. Every kind of violent exercise or exer-

tion should be avoided. Lifting heavy weights is one of the most foolish things possible. I have seen instances enough of its injurious action. In the first case that ever came under my care, the patient, at the end of seven months, was still suffering from excessive discharge of mucus in the urine and emissions. Dr. Bird mentions a case where a student at Guy's, having strained his back by lifting a sack of Epsom salts, fell into a state of marasmus and gradually sank.

Moral Means.—Some writers have laid great stress on the necessity of securing the mind from all impure ideas, and especially from reading all works on the subject; indeed from the tone adopted by several it would appear that this is the only remedy called for. Beyond all doubts both precepts are excellent, and ought to be enforced by every means in the surgeon's power, but no one practically acquainted with the disease would dream of relying upon them alone. It would be just as rational to lecture a patient with delirium tremens or impending mania upon his folly, or to ask a man suffering from the pangs of neuralgia or toothache to wean his mind from the subject. In the more severe forms of the disease some physical improvement must precede any steps of the kind.

Nor have I any more faith in the close mental application reccommended by Dr. Carpenter. On the contrary, I have every reason to believe that, when it exerts any effect at all, it is in many cases injurious. Nor is this merely an individual conviction; students, especially those preparing for examination, have over and over again, when once their attention was directed to the fact, found emissions return so regularly every time they began to study hard, that they had come to the conviction of its being useless to try and do much in the way of cure till the examinations were off their minds. But this is not the only objection to the plan; in a great number of bad cases I believe it is useless to inculcate study, the depression and irritation are too great to allow the attempt to succeed, and, with all the good-will possible, most of these patients cannot make a beginning till they have gone through a course of tonics and purgatives. I therefore advise those who have time to spare, to begin study by reading aloud for an hour every night, and then go out as much as they can into society—a plan from which I have seen better results than from attempting to impose upon an exhausted brain a task it cannot possibly execute.

Earnest zealous students object to this; their friends expect that they will work for honors, and they dare not be left behindhand in the race of life. No alternative remains but to accept what lies before them, and acceptance means letting spermatorrhœa run its course almost unchecked; to keep in the van means to overtax both brain and body. The insane system of forcing now in vogue cannot be kept up without a ruinous strain on the economy; and, though the strong stimulus of competition may prevent the effects from being seen at first, yet, when the period of rest arises, the result of all this folly comes to light. The harrassed and

successful student becomes gloomy, languid, restless, and unfit for any work; miserable in society, and still more miserable out of it; alarming his family with the intimation that he is going mad, and only too firmly believing that such is the case. In this way three or four years of misery are passed, far more time being lost than was gained during study; at the end of which period the natural powers of the constitution often gradually repair the havoc caused by outraging sense. The warnings of Sir Humphrey Davy, Sir William Lawrence, Sir Benjamin Brodie, and many others, against persisting in the present system of eternal cramming and lecturing, seem quite thrown away; and boys and students are still forced and pushed on from the first to the last hour of their studies, tlll they are like hothouse plants,—making a great show at the expense of health and strength. It should be taken into consideration that a patient, who wishes to be cured of spermatorrhœa, is in much the same position as a man who wants to get into a certain state of physical training, for instance, that for a boat-race or a foot-race, or a prize fight. No trainer of any experience would think of coaching him up unless he could restrict the hours of study. The men who undertake this kind of work are, it is true, guided only by rude tradition; but it is of a kind which enables them to turn out splendid specimens of physical strength and endurance, and they know that they could not do this with pupils wearing out their brains day and night. Consequently, if a student laboring under this affection desire to attain the same high state of health as these athletes, he must follow their example as closely as his circumstances allow.

Men of great self-control and determination, who have put in force all moral means at their command, and who have sedulously cultivated athletic exercises, have at last been driven to lay their case before a surgeon; after discovering, but too late, that all their efforts only served to arrest, not cure, the disease. The class of persons, too, most liable to it, shows how little mere moral means avail to effect a cure. Barristers, medical men, authors, tutors, clergymen, are, as they well know, compelled to try the effects of close mental application—yet these are the very classes that yield the largest proportion of spermatorrhœa patients. Still I do not wish to be misunderstood here. I hold healthy occupation of the mind, when it is restrained within fair bounds, and when it can be combined with due exercise of the body, to be an excellent means of keeping up the patient's spirits, of inducing him to persevere in his efforts under the most adverse circumstances and the greatest discouragement, and of substituting a pleasure which never wearies for frivolous or vicious amusements. I therefore always recommend patients to take up a hobby of some kind or other. Whether it be botany or insect-hunting, geology or archæology, fishing or sketching, matters little so long as it gives them plenty to think about; a pursuit of this kind will always be of service and

never can do any harm. Unfortunately only too many persons cannot be persuaded to make a beginning.

Connection.—The vexed question of connection is one which may be decided out of hand. I have already discussed the subject, and now touch upon it merely as a point of treatment. Many surgeons seem to think that the advice of Thetis to her swift-footed son[1] is the grand secret of cure. I believe the opinion to be a grave error, and one which often causes a great deal of domestic unhappiness. 1. Connection has no power of curing bad spermatorrhœa; it may cause a diminution in the number of emissions, but this is only a delusion; the semen is still thrown off; the frame still continues to be exhausted; the genital organs and nervous system generally are still harassed by the incessant tax, and the patient is all the while laying the foundation of impotence. That the disposition to emissions is not in any way cured by marriage under such circumstances, is, I submit, conclusively shown by the fact, that they repeatedly begin again if, owing to absence or other causes, continence have to be enforced. This statement may appear overcharged, but I have every reason to believe it strictly correct. A gentleman informed me that, having been strongly recommended to marry in order to be freed from spermatorrhœa, he had done so, and that often, when he had forced himself to have connection with a view of securing a night's immunity, he had had an emission within three hours after. At the end of seven years, and after the birth of three children, he was quite as bad as ever. Another gentleman, under precisely similar circumstances, told me that at the end of eighteen months, during which he had given the natural remedy a fair trial, he was very much worse, a short period of continence being followed by the worst outbreak he had ever had, the emissions having risen in one week to as many as nine or ten. A gentleman, who had consulted three or four physicians of high standing about his case, and had been repeatedly advised to marry, did so, though feeling that he was making a mistake. He had four children, and each time, as his wife's pregnancy advanced to a close, the emissions returned as bad as ever. At the end of nearly twenty years he consulted me, the case having gone on the whole time from bad to worse.

2. When the patient is nearly, but not quite, cured, connection will not even carry off the dregs of the disease. I have been consulted by a patient, whom I had previously attended, and in whom I have, after thirteen years of married life, found, on his becoming a widower, almost identically the same degree of spermatorrhœa as when I first treated him. Indeed, experience has convinced me that, except in those rare cases where the patient will consent to be, and can be, treated after the ceremony, marriage must follow, not precede, a cure. When this can be

[1] "ἀγαθὸν δὲ γυναικὶ περ ἐν φιλότητι
Μισγεσθ'."

done, even a very considerable degree of spermatorrhœa need not interfere with his marrying, as well-regulated connection is, under the surgeon's care, often an aid to treatment.

3. I have grounds for inferring, that bad symptoms in married men are very often due to connection when the frame is really not strong enough to bear it. A mistake on this head is easily made and not always so easily repaired. I was consulted by a gentleman for emissions. He had two or three every week; he was of delicate frame, and at the time I saw him, desponding in a high degree. He was about to get married, and it was in respect to this that he wished to have my opinion. I recommended him not to take such a step until he had quite recovered. My opinion was overruled, and he married forthwith. Not long after he began to show signs of declining health, which gradually increased, and within two years from his marriage he died. I was consulted by a patient who had formerly been under my care for emissions; they were very frequent, and were followed by a sense of exhaustion and a feeling in his head which he could not clearly describe, but which made him very miserable. Latterly the emissions had often occurred without awakening him. I advised him not to marry on any account till he was thoroughly cured; not being satisfied with this opinion he went to one of our leading surgeons, who took a diametrically opposite view of the case and recommended marriage. Being quite resolved, however, not to do matters by halves, he, in addition, consulted two of the most eminent physicians in London, who, according to his account, came to the same decision as the surgeon; fortified by these opinions he married, and a heavy penalty he paid for doing so. Within a few months after he began to find that connection, which was at first attended by a feeling of relief, was now followed by great exhaustion, and a return of the old miserable feeling in his head; he had lost flesh to a great extent, and had become so weak that he could not attend to business at all. He admitted readily enough now that he had made a sad mistake; it needed no arguments to convince him that he ought never to have married. I recommended him to give up all connection whatever, to take cod-liver oil, quinine, wine, and rum and milk, and at any pecuniary sacrifice to get immediate change of air. After remaining some months in a very critical state he left, with very doubtful prospects before him, and took a light situation in the country; seven years from the time of his first visit he again consulted me, not having improved at all in the interval.

As to the amount of connection itself, when thought desirable in the cases just discussed, there is one very simple rule, and that is, to permit it only when the appetite for it becomes irrepressible in spite of all resolution to the contrary. According to the statement of an anonymous author, which Dr. Carpenter "believes to be strictly correct," it would appear that excesses in this respect are only committed by unmarried

men. The idea is very praiseworthy, but the doctrine is essentially unsound.

TREATMENT OF COMPLICATIONS.—1. *Vesicular Gleet.*—This disorder is generally very manageable, simple aperients and tonics, with cold bathing, followed by a blister, being usually all that is required. A little sulphate of magnesia or soda, taken before breakfast and dinner, or lunch, in combination with quinine, and an aperient pill occasionally at night, will produce one or two loose motions daily, and by this means induce a marked diminution of the discharge, and, when aided by blisters, will, I believe, rarely fail. Imperceptible passage of semen requires no treatment beyond that for exhaustion.

2. *Irritable Bladder; pale Urine.*—Nitric or nitro-muriatic acid may be given when there is much irritability of the bladder or scalding. If the patient complain of spasmodic pain at the neck of the bladder, and we find the urine loaded with lithates or clouded with mucus, these acids, along with laudanum or liquor opii, may be exhibited in decoction of pareira brava or chimaphila. The medicine, being rather constipating, should be accompanied by an aperient pill.[1] The pale urine, so often complained of by men accustomed to great mental toil, is a symptom which has not received the attention it merits. It is by no means uncommon with persons so situated. Barristers have told me that they suffered from a copious discharge of pale urine soon after sitting down to master a brief. Some men are attacked directly they begin to play chess. A patient, who was very fond of algebra, assured me that so soon as he got absorbed in a difficult problem he was obliged to rise and empty his bladder. A strong tendency to sleeplessness often accompanies this.

In such patients the skin sometimes acts very feebly till they take exercise, there being almost no perspiration and lessened transpiration; yet very slight exertion will bring on profuse sweating. To a certain extent they are accordingly benefited by friction of the skin, as with a hair belt and gloves, and a moderate use of vapor and hot baths. In general, when this irritability of the bladder is the only symptom complained of, it does not require any very great attention; but when it coexists with spermatorrhœa, or a strong tendency to this disorder, I would decidedly advise that, in addition to the usual treatment by tonics, some part of the food, and especially what is taken to drink, should be given in the form of a diffusible stimulant. Thus, for instance, let the patient, so soon as he finds an attack of this kind coming on, take a glass of wine, such as madeira, or a cup of good coffee, or a basin of hot soup. A small basin of beef-tea, chicken-broth, or veal-broth, with a large glass of port

[1] ℞ Acidi nitro-hydrochlor. diluti. ʒ iss, Liquor. opii sedativi (Battley), m. xl. Extracti pareiræ liquidi, ʒ iv, Decocti pareiræ, ad ℥ vj. ♏. Cochlearia ampla duo bis quotidie sumenda. ℞ Pilulæ colocynth. et hyoscyami, gr. xii ; divide in pil. iii. i omni nocte sumenda.

or Tarragona in it, answers very well. Cream, vermicelli, or an egg, may be occasionally substituted for the wine; or an egg beaten up with a glass of port may be tried. If it continue to recur, let him try the French style of living—a cup of tea or a basin of light soup on rising; at half-past ten a good substantial breakfast, a thorough *déjeuner à la fourchette*, with half a bottle of claret; at half-past five or six a light dinner, something that will refresh the frame. After dinner a cup of mocha coffee or of tea may be taken, and in winter the patient may follow this up with a little rum and milk. In attacks of prostration and excitability from undischarged electricity in the air, or at any rate from that state of the atmosphere which sets up electrical phenomena in the human body, the only treatment that I have seen do any good is one not suited to spermatorrhœa. However, for the time the symptoms just mentioned constitute the greater evil of the two, and therefore I generally order for them a very light diet, plenty of champagne, and rest on the sofa, as lightly, covered up as possible.

3. *Affection of the Prostate.*—I am not aware that anything of this kind, occurring with spermatorrhœa, requires more than blistering and occasional resort to the nitrate of silver. This also holds good of urethral mucous gleet.

4, 5. *Gonorrhœa and Gleet* are not unfrequently met with among spermatorrhœa patients. These are generally persons who, almost recovered from spermatorrhœa, have suffered a relapse in consequence of contracting infection. In gonorrhœa, as in all other diseases, each case must, to a certain extent, be treated on its own merits. The use of specifics, such as copaiba and cubebs, is still more to be deprecated here than where the case is uncomplicated; they are scarcely ever called for, are often useless, and too often injurious. The irritation of the bladder, the disordered state of the stomach, the lowered tone of the health, the foul and trembling tongue, induced by large doses of copaiba, are particularly calculated to make the spermatorrhœa worse. In general, however, if there be no great disorder of the health and no other complication present, gonorrhœa is soon subdued by aperients, acetate of potass, and mild injections, applied, not to the orifice, but over all the diseased surface.[1] In obstinate cases of gleet, blisters, tonics, mild aperients and injections, are, so far as I can form a judgment, the only means on which the surgeon can count for success. In urethral mucous gleet I have occasionally found full doses of Battley's essence of spurred rye very beneficial.

6. *Irritable Urethra.*—A very useful means of diminishing any morbid sensibility of the urethra, especially in those cases complicated with slight stricture or gleet, is the use of a gum-elastic bougie, warmed till it is quite soft, and introduced twice a week. Aperients, tonics and sedatives

[1] For farther particulars I must refer to my work on The Treatment of Gonorrhœa.

combined, should also be exhibited; among these figure infusion of rhubarb and calumba with soda; gray powder and Dover's powder; nitric acid, laudanum, decoction of bearberry, or infusion of quassia, according to the circumstances of the case. [1]

Dr. Bliss recommends,[2] for the spermatorrhœa itself, dipping the bougie in iced water till its temperature is brought down to 38°, and introducing it twice a day, a method which seems to have succeeded very well. He does not tell us how the temperature of the instrument was ascertained, but were this difficulty got over, a still greater would remain behind. In England few spermatorrhœa patients could carry on such a process themselves, and not one in fifty could attend twice a day to have the operation performed by a surgeon. Winternitz, seemingly in total ignorance of what Bliss had done, tried [3] to effect much the same purpose by means of a double chambered catheter, pouring through it a stream, at first of hot water, and then of cold; a mode of treatment which did not succeed very well in this affection, though it answered famously for gleet.

To my thinking the English bougies are by no means well suited to these cases, especially when there is any stricture. In the first place the shape is bad. A bougie of the form shown in the annexed engraving is much better adapted to the case, and passes with far greater ease. In the next place the material is too hard and unyielding. The French instruments, as we usually see them in London, are not over safe, especially those with ball-points, which are often partially torn off by drawing them through a stricture. Those made by Mr. Walters for me, which can be tied in a knot, and, when steeped in hot water, are so pliable that they cannot possibly do any harm, are in my judgment much better. Mr. Teevan, whose opinion is entitled to all possible respect, is in favor of the best French bougies; but after examining the matter again I see no valid reason for retracting my decision on this point. A bougie of this kind, dipped in very hot water, then dried and well oiled, will pass along the urethra and scarcely give even the least uneasiness, when an ordinary instrument would occasion intolerable pain. Some surgeons seem to think pain is rather desirable in spermatorrhœa than otherwise. Mr. Adams advises [4] that a bougie should be passed, and that if it cause a little pain and bleeding, all the better, as that will divert the patient's mind from imaginary sufferings; but I should think pain an evil to be always avoided,

[1] For instance.—℞ Sodæ bicarbonatis, ʒ j, Syrupi aurantii, ʒ iij, Spiritûs myristicæ, ℥ ss, Infusi rhei, ℥ iij, —— cuspariæ ad ℥ viij. ℿ. Cochlearia ampla duo ter quotidie sumenda. ℞ Hydrargyri c. cretâ gr. iv. omni nocte sumenda. Double or treble this quantity of Dover's powder can be given, and in the form of a pill if preferred; but treating the gray powder in this way might reduce the mercury.

[2] Boston Medical and Surgical Journal, 1868, Jan. 30.

[3] Berliner klinische Wochenschrift, 1877, S. 401.

[4] Medical Times, 1857, vol i. p. 453.

if possible, and more likely to divert the patient from consenting to steps absolutely necessary to the cure.

Irritability of the urethra however, and especially the second form spoken of, may require, in addition to the bougie, the occasional use of nitrate of silver, and even of a blister. The uneasy sensation in the epididymis or testicle is sometimes benefited by a sedative application, such as veratria ointment. If this fail there can be no harm in applying a blister, at least I never saw any, and I have repeatedly done so. Patients suffering from these symptoms generally require a long course of treatment, consisting of the occasional use of tonics, accompanied by the administration of aperients, and aided by good restorative diet. In these cases Professor Gross proposes[1] to "obtund" the sensibility of the canal by injecting every eight hours a solution of chloral and potassium bromide, the operation of which is to be aided by sitz-baths and the administration of a compound of three sedatives at the same intervals. As this would necessitate at least three visits a day, almost certainly derange the patient's stomach, and leave him little if any time for either business or pleasure, my impression is that in England not one patient out of a hundred would listen to the suggestion of such means.

7. *Stricture* is not a very common complication of spermatorrhœa unless the patient has suffered also from gonorrhœa. I have, however, several times seen it when there had been no foregoing urethral discharge, and when the contraction seemed really due to the irritation set up by the emissions. It is generally under these circumstances much more manageable, and the constriction has always appeared to me to be shorter, thinner, and weaker than the ordinary kinds. Indeed, unless the disease has been allowed to go on unchecked till it has attained a most unmanageable form, the stricture which results is seldom very difficult to treat. It seems hard to understand how an affection, induced by the spermatorrhœa, should, when once produced, keep up the parent disease; yet such appears to be the case, and I have sometimes found that the cause of resistance of an obstinate case was a stricture, the existence of which had not been ascertained. In others I have noticed that the emissions got well, and yet that the stricture went on unchecked unless it was treated.

In four patients I observed that peculiarly severe and unmanageable stricture, quite as bad as I have sometimes seen after gonorrhœa, had been set up, which I could only ascribe to the emissions, all four maintaining that they had never had connection or an instrument of any kind passed. In every one of these cases the urethra was intensely irritable, twisting a silver instrument with such force that I have repeat-

[1] Op. citat. p. 45.

edly had to give up all attempts to reach the contraction. This irritability may indeed exist to as great a degree when there is no stricture, but passes off sooner. A gentleman, who had been long in India, consulted me for emissions. On passing the tube of the long syringe about three inches down the urethra, a spasm came on which compelled me to stop; on placing the forefinger on the perineum I could feel the urethra lifted up, apparently quite a third of an inch. Retention of urine came on the same night, and for three days I had to draw the water off morning and evening. By dint of hot baths, rest and sedatives, the retention was subdued on the fourth day, and shortly after I passed a number 10 the whole length of the urethra. Very similar results occurred in two other cases, one of the patients having also been a long time in India. One gentleman had an emission immediately after passing a bougie very gently; in another the use of the instrument was succeeded not only by difficulty in making water but also great pain, accompanied by tenderness over the prostate.

Stricture is reported [1] by Professor Gross to be enormously prevalent in his practice, only twenty-two patients out of ninety-one suffering under spermatorrhœa, and eighty-two with (atonic) impotence, or one hundred and seventy-three in all, being free from it. Having repeatedly passed a full-sized bougie on a large number of patients in succession, laboring under one or other of these affections, without finding any obstruction, I can only suppose that stricture must be far more common in the States than here. In support of the statement he appeals to the experience of Mr. Wade and Professor Otis, who trace a large proportion of stricture cases to onanism. But a large proportion of cases of stricture of the rectum might with equal justice be referred to the same cause; for the mischievous habit is so common that the difficulty would be to find anywhere a considerable number of male patients several of whom had not practised it.

This is not the place to launch into an essay on the management of stricture, and therefore I restrict myself to very narrow limits. The cases with which the surgeon has to deal seldom embrace any of the more serious circumstances, such as sudden occlusion of the passage, retractile stricture, fistulæ, and so on; consequently most of them call for little more than the use of the bougie recommended for irritable urethra. Should the progress not be satisfactory, two or three applications of the nitrate of silver, by means of the instrument previously described, generally produce such a relaxation or absorption of the stricture as to enable a No. 9 bougie to pass with ease. Contraction of the anterior portion of the canal may require the use of the screw dilator; for any lesion of the posterior part of the urethra I should feel more hesitation about employing it. These means will, I believe, remedy any form of stricture usu-

[1] Op. citat. p. 23.

ally met with in spermatorrhœa, which will really yield to treatment, and there are very few that will not. Patients usually labor under the impression that in treating stricture it is absolutely necessary to distend it steadily, progressively, and it may be forcibly. This is a mistake, and especially in regard to traumatic and retractile stricture. At no time does any such amount of excessive force as may give pain prove serviceable; in the two latter forms it is the very reverse. Of course a patient who has just made some progress, say got up from number four to number eight, is exceedingly mortified at finding that he must go back all at once, not to four, but to three or even two; but this must count for nothing against the certainty of aggravating mischief by attempting dilatation when the canal will not bear it. At such times what is wanted is, not the largest-sized bougie that can be got through the constriction, but a size that will pass into the bladder without setting up irritation. Traumatic stricture is occasionally met with as an accompaniment of spermatorrhœa; it is a very distressing complication, and one which sometimes long defies the most sedulous care, the pain and irritation behind the seat of injury being often but little influenced by art. In a case in my practice, where a blunt instrument entered the urethra from the perineum, the patient continued for years after to suffer most severely from the symptoms I have just mentioned. They seemed to be quite unaffected by treatment. Connection, he said, always aggravated them. Stricture, when there has been an antecedent neglected gonorrhœa, may also prove extremely obstinate.

Twice I have seen enlargement of the veru montanum spring up during treatment, and to such an extent as to impede the passing of an instrument, however small, the stream in both cases remaining, according to the patient's account, as large as ever; in both these cases I felt rather doubtful as to whether the repeated use of the nitrate might not have contributed to the disposition, though it seemed so difficult to reconcile this possibility with the fact that scores of patients, who had been cauterized quite as extensively, had never had anything of the kind. At least four times I have noticed what certainly seemed to me the form of stricture at the neck of the bladder so well described[1] by Guthrie, and have found it very troublesome in every instance, requiring a most persevering use of gentle dilatation.

In the absence of a more suitable place I may add here that forced dilatation of the rectum, commended to M. Trousseau as a remedy for spermatorrhœa by M. Adolphe Richard, has been employed by Dr. Bartholow with excellent results.

8. *Irritable state of Foreskin.*—Whenever there is an accumulation of sebaceous matter under the prepuce, it should be got rid of as quickly as possible with soap and water, aided by the subsequent use of an astring-

[1] Op. citat. p. 11.

ent lotion of zinc or sulphate of copper. For the time being this will suffice, but sooner or later, and particularly when there is also a contraction of the prepuce, so that the glans cannot be uncovered without pain; where a firm, constricting ring has formed underneath the mucous membrane, or where the emissions seem to be kept up by the extreme length of the prepuce, circumcision, or at any rate division of the constricting ring, is absolutely necessary. No patient, too, who is going to reside for a long time in a hot climate, should omit to have division at least performed. When circumcision is imperatively called for, I have found it best to slit up the skin and mucous membrane to the reflection of the latter, and then to cut away the frænum as far as I could. The constricted part, which is mostly near the edge, is removed in a circle with a pair of sharp scissors, and the bleeding being stopped, the skin and mucous membrane are brought together by several fine stitches; the intervening spaces may be covered with wet lint. Of all the operations I have seen this leaves the neatest prepuce.[1] But a simpler and milder plan of proceeding is to divide the foreskin on the dorsal surface, drawing back the loose outer skin towards the pubis, so that, when the division is completed, the posterior point corresponds in each thickness of the foreskin. Three stitches only are required to keep the parts together; one at the apex and one at each side. True, two rather unsightly little flaps are left at first, but they gradually shrink to almost nothing, and can always be snipped off should the patient object to their presence, which, however, I have never yet known a patient do. This mode, which effectually frees the glans and reflection of the foreskin from sebaceous matter, has the advantage over circumcision, that it requires a shorter time to perform, is much less painful, and does not confine the patient to the house. Properly performed, and properly attended to by the patient, it leaves scarcely any mark.

It may be as well to add here, that I have never seen such excellent results from circumcision, however complete and sweeping the operation adopted, as are mentioned by M. Lallemand, Kaula, and others.[2] On the contrary, I have repeatedly observed that the entire removal of the foreskin failed to affect the emissions in the least. Perhaps this will be a suitable place to consider the proposal occasionally made by a patient, that the surgeon should castrate him for the cure of emissions. I suppose a person, making such a suggestion, is in a state of mind only one degree removed from the monomania which leads him to think that the operation opens up to him the only chance of being rescued from eternal perdition, an argument used by one patient when I refused to take off the testes; or will put an end to the absorption of the glands, which he

[1] "Mr. Milton's plan is simple, and as good as any."—On Gonorrhœa and Syphilis. By Silas Durkee, p. 78.

[2] London Hospital Reports, vol. ii. p. 58.

is quite convinced are fast disappearing or have disappeared, although in reality perfectly normal in size, a delusion perhaps even more common than the other.[1] It is very difficult to deal with these cases, and I cannot say that my own success in endeavoring to persuade the patient, that his fears were groundless and his proposition untenable, has been at all commensurate with my efforts. I therefore merely mention the subject with the view of pointing out to the reader that he must lay his account to meeting now and then with difficulties of this nature; not that I can suggest any feasible mode of coping with them.

9, 10. *Coldness of the Penis and Scrotum; Varicocele.*—Coldness is an important sign and should not be lost sight of, as it often increases or diminishes with the growth or decline of the spermatorrhœa, so long as impotence has not ensued, when it becomes chronic and often pervades the whole frame. When, in a case of spermatorrhœa, this symptom persists, the surgeon must make up his mind to treat it in earnest, or very unsatisfactory results may follow. I am most anxious, in respect to this as to any other symptom, not to say a word which might create unnecessary alarm; but I consider that it would be a gross dereliction of duty for an author who knew the importance of attending to such a warning, to disguise the truth with the view of flattering any opinions or prejudices whatever. One of the first things to do is to give quinine, if it has not been given before, and this is one of the few affections of such a nature in which it may be advantageously conjoined with iron. The citras quiniæ et ferri may be prescribed in doses of five grains three times a day, but there will rarely be much improvement till it has been continued some time, and till the patient can take quite double this amount, or even more. The patient may take a glass of rum and milk at night, gradually raising the quantity of the former from one to two wine-glassfuls of rum; it is, however, essential that this should be pure and old, and that the milk should be good. As both these requisites are attainable, in London at any rate, there is no excuse for any negligence on this head. I have often seen very good effects from the use of a course of De Jongh's cod-liver oil, especially during cold weather. Whenever it is necessary to interrupt the use of the citrate, I would give the preference as a substitute to the dilute phosphoric acid, a medicine from the due use of which I have seen much benefit; the patient must, however, take at least a drachm daily. As I never saw the treatment or neglect of varicocele exert any appreciable influence over the course of the spermatorrhœa, I rarely, if ever, interfere with it, except at the express wish of the patient, when a varicocele ring may be worn, or a small spring clip, which seems to answer even better. Mr. Curling, who, as has been observed, attributes much importance to this complication, and first recommended[2] a lever

[1] Archives générales de Médecine, tome xxvii. (1831), p. 23.

[2] Medico-Chirurgical Transactions, vol. xxix. p. 267.

mocmain truss for it, now advises[1] also ligature of the veins; and gives us the encouraging information, that after the dilated veins have been closed by an operation, the atrophied glands have in some cases recovered their former size and tone.

11, 12. *Sebaceous Stools; Worms.*—Among the complications of spermatorrhœa I have occasionally found patients complain of a discharge of fatty or sebaceous matter, sometimes swimming like grease on the top of the water in the pan of the water-closet, sometimes in the form of flattish cakes about half an inch in the longest diameter. The latter symptom occasionally gives a good deal of trouble, as the secretion is apt to cling to the anus, or get entangled in the hairs. I had one patient in whom the fluid form assumed almost the character of adipose diarrhœa. He was strongly built, but his skin had a peculiar earthy, pasty look, and his digestion was in bad order. He was liable to faintness, constantly discharged large quantity of urates, and complained of weariness, and great pain over the loins; he had long suffered from emissions, and had been under my treatment for a slight gonorrhœa; the discharge at stool took place every day, and in considerable quantity. The use of quinine in two-grain doses twice and then three times a day, aided by mild aperient pills, sulphite of soda mixture, very careful dieting, and two or three injections of nitrate of silver, had almost entirely removed this unpleasant symptom, when he was obliged to leave off attending; about a year afterwards he consulted me for another complaint, and I then learned that he had ceased to notice the sebaceous matter within a few weeks after his last visit. The steel prescribed for the emissions generally gives a very good account of ascarides, but it may prove necessary to prescribe anthelmintics for any species of these parasites.

13. *Urinary Deposits.*—At one time, when I used to examine the urine with great care, I treated disturbance of it very elaborately, and I suppose there is no rule of practice which I have more completely unlearned. Should the patient really be ill in other respects when he is suffering from urinary disorder, or be very anxious about the appearance of the urine itself, it may perhaps be better, for a few days, to leave other matters on one side and attend to this; similarly, when he is recovering from his spermatorrhœa, no harm can arise from prescribing as fully as he may wish for any disturbance of this fluid. But until the emissions are mastered, I consider all such practice as utter waste of time and money; whatever cures them will do all that is requisite in the way of setting the urine right, while the most complicated treatment of urates and phosphates, if it leave the main disorder unrelieved, means sacrificing the substance to the shadow. However, as cases now and then arise when it becomes necessary to do something, I give a few directions which, re-

[1] Op. citat. 1878, p. 549.

stricted as they may seem, still embrace all, or even more than all, that is ever called for in spermatorrhœa.

When phosphates are present in the urine the accompanying symptoms must be very carefully looked to. Generally speaking, it may be said that, irrespective of this deposit following a strain or blow, the first great requisite is a free use of diffusible stimulants, such as ammonia and ether; thus, for instance, the ammoniated tincture of valerian may be given in drachm doses, three times a day, or the aromatic spirit of ammonia in the same quantity, and either of these may be conjoined with half-drachm doses of the spirit of ether. Rum and milk at bed-time, especially if pains be taken to secure old Jamaica rum, answers very well with these patients. Dr. Harley, when in such cases the patient perspires freely and the sweat is acid, recommends[1] nitro-muriatic acid with gentian after meals, and sulphuric acid, to diminish the perspiration, between them. Very small doses of strychnia may be given with advantage; I know of no method superior to that of prescribing it in the acid and bitter mixture at page 372. Those cases in which a deposit of the phosphates follows an injury of the spine are more rarely seen in connection with spermatorrhœa, and fall rather within the domain of general surgery. In these cases one of the most valuable remedies is, especially if there be pain, a large opium plaster over the seat of the injury; when this cannot conveniently be resorted to, sponge-baths and friction over the loins with a horse-hair belt may be employed. The general treatment is much the same as in the preceding class of cases; citrate of iron and quinine seems to answer very well. Dr. Prout used to give morphia with very great benefit in these cases, but to be of any value it will be requisite to order quite half a grain to a grain daily; the acetate, in conjunction with the solution of acetate of ammonia, offers a very useful formula.[2] Oxalates in the urine require abstinence from all heavy food, ill-cooked vegetables, sweets, wine and beer; cold, unsweetened brandy and water or whiskey and water being substituted. Nitric and nitro-hydrochloric acid, with tincture of orange-peel, cinnamon or calumba, accompanied by mild mercurials and laxatives,[3] are useful when great nervous irritation exists. The late Dr. Golding Bird used to give sulphate of zinc in large doses, often prescribing along with it a small amount of hyoscyamus and camphor. It is, however, according to my experience, very questionable whether it equals the tincture of the sesquichloride of iron. Colchicum is sometimes of service. Mineral waters such as Friederichshall have

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[1] Medical Times and Gazette, 1864, vol. ii. p. 484.

[2] ℞ Liquoris ammoniæ acetatis, ℥ iss, Spiritûs ætheris nitrici, ʒ iij, Morphiæ acetatis, gr. j. Aquæ camphoræ ad ℥ vj. ℔. Cochlearia ampla duo ter quotidie sumenda.

[3] ℞ Acidi nitrici diluti, Tincturæ cinnamomi, āā ℥ ss, —— cinchonæ, ℥ ij. ℔. Cochleare minimum ex aquæ cyatho vinario ter quotidie sumendum.

been very much extolled[1] for their effects in oxaluria, considered by some authors to be a strongly predisposing cause of emissions; but as a modern writer puts it,[2] the spermatorrhœa itself will explain what is attributed to the oxalic diathesis, and the reader may rest assured that what can be cured by a feeble remedy like Friederichshall water is not likely to give him much trouble.

Perhaps more than any other deposits urates and uric acid may be left to themselves. No doubt we can relieve them, and more scientifically too, by means of various prescriptions of alkaline mixtures and gentle alteratives, combined with equally various and efficacious modes of promoting perspiration; and when the patient will be prescribed for these seem to be among the best things to order. But I now invariably advise him to let the matter alone, or at the utmost to take two or three doses of saline and to keep to a light diet. When gastrodynia is also present, dilute hydrocyanic acid or bismuth may be given just after meals. Dr. Golding Bird used to prescribe in these cases oxide or nitrate of silver; but staining of the skin has so often resulted from the use of both, that I think neither ought ever to be employed unless the symptoms are of the most serious nature, and that we rarely, if ever, find in spermatorrhœa. The amount of animal food ought to be reduced as low as is compatible with the preservation of strength, and in very urgent cases had better be suspended altogether. The tincture of the sesquichloride of iron is also very useful here, and colchicum is often beneficial.[3] Tartrate of potass and phosphate of soda are also of value.[4] The presence of cystine generally indicates a necessity for giving acids which will promote the elimination of bile, as the nitric or nitro-muriatic, or the use of iron, as the tartrate or tincture of the sesquichloride. The state of the health should be carefully attended to, the bowels acted on by gentle aperients and alteratives, and all malt liquors, rum, *et similia*, be avoided.

As I have never seen blood or albumen in the urine to such an extent as to call for special treatment, I refrain from touching upon points in therapeutics which might lead me too far from the subject in hand. Pus I have occasionally seen in very alarming quantities, but there was nothing in the history of any of the cases, or in the results of treatment, to justify the belief that it required any measures except those calculated to ward off exhaustion. When this symptom yields at all, I believe it always

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[1] Reynolds's System of Medicine, 1879, vol. v. p. 444.

[2] Dictionnaire des Sciences Médicales, 1884, tome xix. p. 441.

[3] ℞ Extracti colchici acetici, Pilulæ hydrargyri, aa gr. vj, Extracti hyoscyami, gr. xij. ℳ. ft. pil. vj. Sumat i. omni nocte.

[4] ℞ Potassæ tartratis, ʒ i, Syrupi aurantii, ʒ iv, Spiritûs myristicæ, ʒ ij, Infusi cuspariæ ad ℥ vj. ℳ. Sumat cochlearia ampla duo bis quotidie. Phosphate of soda may be substituted in the same doses, as only small quantities are required when a diuretic effect is aimed at.

yields to the treatment laid down for spermatorrhœa, and possibly the tincture of the sesquichloride of iron is as potent a remedy against it, especially when conjoined with mild counter-irritation over the seat of the disorder, as any that could be suggested. An excess of mucus generally calls for the use of alkalies, such as the bicarbonate of potass in some astringent decoction or infusion, as that of pareira, bearberry or buchu; but for these substances to exert any real influence over cystorrhœa they must be taken in much larger doses than are generally prescribed. The amount of bicarbonate of potass need not exceed fifteen to twenty grains, but to order ℥ ss. or ℥ j. of decoction of uva ursi or infusion of buchu, seems to me waste of time. We might as well tell the patient that he would find two or three tablespoonfuls of warm tea a refreshing meal. Either the patient should be directed to make the decoction and infusion (for I think they act best in conjunction) himself, and take quite half a pint daily, or a drachm of the liquid extract of pareira should be added to each dose. Liquor potassæ acts very well in some of these cases; half a drachm may be given two or three times a day in quite half a tumbler of good milk, which disguises its nauseous soapy taste infinitely better than anything I know. Weak table-beer is considered preferable by some practitioners. Benzoic acid is said to be occasionally very useful in intractable cases.[1]

14. *Gout, Rheumatism, Neuralgia.*—If a patient suffering from spermatorrhœa or a tendency to impotence be attacked with gout, rheumatism or neuralgia, I believe he inevitably suffers a relapse; it may not be severe, or it may be very troublesome, but my experience is, that he always gets somewhat worse. It is possibly this tendency to increase of emissions which has made some writers think that gout augments the desire for connection, but I am inclined to believe its action is the very reverse, and that the same holds good with respect to every disorder attended with pain.

I would, therefore, always suggest removing the pain itself as quickly as possible. In gout, colchicum and alkalies still seem to be the favorite remedies, colchicum having perhaps stood its ground better than any other; in my hands it has failed so often that I confess to utter want of faith in it, and after long prescribing it, more as a matter of routine than conviction, I have ended by abandoning it altogether; nor have I, on numerous occasions, been more successful with alkalies of any kind and in any dose. Effervescent drinks have been extolled by a recent writer. Such remedies usually refresh the patient, and so far as that part of the matter is concerned, may be given in almost every complaint with some benefit; but I never observed any diminution of the pain and swelling

[1] ℞ Acidi benzoici ʒ j, Glycerini, m. xij. Misce et ft. pil. xij. Sumat ij bis quotidie.

from the freest use of them. The remedies which have succeeded best in my hands are sedatives, especially the compound form mentioned at page 385, a dose of saline mixture in the morning, and the mixture prescribed below[1] by day; which is also the best remedy for rheumatism that I have ever tried, and has answered in my hands far better than salicylic acid or any of its compounds. When gout is declining, or has never been very severe, two or three Hunter's powders, a combination I believe of carbonate of soda, sulphate of potass and guaiacum, act most beneficially. As to external applications, I have had little success with them, but those recommended for rheumatism can be tried. The most reliable application in severe cases of the latter is I think beyond question blistering, but arnica and hazeline seem to give relief, as does also a strong solution of opium with camphor and chloroform.[2] I know of nothing which gives so good an account of the last traces of gout and rheumatism as the vapor bath, and as this can now be had at a much less cost than formerly, there is no longer so much difficulty in the way. In either gout or rheumatism, after the first severity of the pain has been suppressed, quinine and iron should follow, accompanied by the saline. In neuralgia the medicine from which I have seen most relief is a combination of valerian powder with sulphate of quinine, a scruple of the first to a grain, and a grain and a half or two grains of quinine, three times a day, but I at once admit that it is a most disagreeable compound. Sir Charles Bell's prescription of galbanum and croton oil[3] is highly to be recommended; a mode of treatment afterwards successfully adopted by Hancock.

A few concluding words as to the methods adopted by other practitioners. No less than six authors recommend a system of treatment the extreme limit of which comprise steel and sedatives, bougies, hip baths and friction; some of them not even so comprehensive, going indeed no farther than caustic as a specific; the more complete systems, however, being remarkably like each other, but one and all accompanied by a great deal of excellent advice, one especial recommendation, not to think about the subject, always standing out in strong relief. I have over and over again employed all those remedies singly, and several combinations of them, and have succeeded very indifferently; and I am perfectly at a loss to understand how it is that other writers have been so fortunate,

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[1] ℞ Potassæ nitratis, Potassii bromid., aa ʒ iss, —— iodidi, gr. xv. Chloral. hydratis, ʒ ss, Syrupi aurantii, ʒ vi, Aquæ camphoræ ad ℥ vi. ℿ. Pars sexta ter quotidie sumenda.

[2] ℞ Guttæ nigræ, Chloroform. aa ʒ j. Lin. camph. c. ʒ ii, —— saponis, ʒ iv. ℿ. ut fiat embroc. A little to be rubbed into the painful part with a piece of flannel at least once daily.

[3] ℞ Olei Tiglii (Croton) gtt. i; Mass. Pil. Colocynth, Co. ʒ j. Misc. et fiant pil. xij. Mitte Pil. Galban. Comp. xij. One of the purgative pills and two of the gum pills to be taken on going to bed.—Institutes of Surgery, vol. ii. p. 119.

particularly in effecting such rapid cures as those mentioned by Goss[1] and Lepri,[2] with remedies which failed not only in my hands, but those of some very good practitioners. The good advice, always recommended, of course had its share in contributing to this fortunate issue; at which I am equally surprised, having always been under the impression that it was of about as much use here as in hydrophobia.

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[1] Op. citat. p. 31.

[2] Op. citat.

CHAPTER V.

TREATMENT OF IMPOTENCE.

It will now be necessary to go over, as briefly however as is consistent with efficiency, the remedies most adapted to the cure or relief of impotence; and I may as well explain, that by remedies I do not mean everything that has at one time or other been recommended for the affection, but such as careful observation warrants us in regarding as most suited to effect the purpose arrived at. I do not propose to examine them in the same way as those recommended for spermatorrhœa, for as they are mostly the same medicines, that would really mean repeating what has been said already; my object is rather to condense what seem the most useful facts known in respect to them. In writing upon the question of treatment, I wish to discard all lines of demarcation between the different divisions of impotence; they are here only matters of degree. I am assuming that the management of the more transient forms is comprised in that of spermatorrhœa, and that we are dealing here with an affection of some standing, and of sufficient importance to call for treatment when no other symptom is present.

The plan of treatment I would venture to suggest would be the following: In the first place, quinine should be given regularly for a considerable time without the least regard to whether it appears to be doing good. Along with quinine strychnia may be given, but upon quite a different principle. The dose of the former requires to be slightly but regularly raised every six or eight days. There can be no objection to combining either with capsicum, a remedy which has been praised by some writers, but from which I have seen little if any positive benefit. I have, however, never given it except with other drugs, so that I am scarcely qualified to speak very positively. The dose of strychnia on the contrary rarely requires to be increased beyond a drop or two of the liquor. It may often be necessary to interrupt the administration of the quinine; the strychnia should be continued whatever tonic medicine the patient may be taking, phosphorus and ergot of rye excepted. The great secret of success here is to give in it very small doses for months together. In the way of formula I know nothing superior to that given below.[1]

[1] ℞ Quiniæ sulphatis, gr. xviii, Magnesiæ sulphatis, ʒ iv, Acidi sulphurici aromatici, ʒ ij, Liquoris strychniæ, m. ii, Tincturæ capsici, ʒ ss, Aquæ cinnamomi ad ℥ vi. ℔. Cochleare amplum ter quotidie sumendum.

When the patient is anæmic or suffers from the coldness spoken of above, or when he has grown rather tired of quinine and it seems to be losing its effect, iron may be prescribed along with the quinine, and cantharides in very moderate doses can be added, but the latter remedy must be used very guardedly, and given up directly any symptoms of strangury show themselves even remotely Employed cautiously, however, as for instance in five or ten-minim doses of the tincture for eight or ten days at a time, I see no valid objection to its employment, and never hesitate to prescribe it. Should the patient be very low, and find or even suppose that quinine and iron do not suit his stomach, ammonia and citric acid can be added.[1] The quantity of quinine in the mixture, can be gradually raised to thirty or forty grains, and that of the citrate to two drachms and a half, beyond which I have not found it advantageous to go.

But however well quinine may be adapted to the first emergencies of the case, there generally comes a time when its action on the system begins to flag so evidently as to attract the notice of the patient. It is of no use to raise the dose of the medicine any longer, the constitution has become accustomed to the use of the remedy, and the only thing is to give it up for a time, after which it may be resumed with almost certain anticipation of benefit. During the interval I would recommend the use of phosphorus; from the thirtieth to the twentieth of a grain may be prescribed in the form of a pill, and the dose gradually raised to as great a height as the patient can bear. To succeed however with this drug, some special precautions must be taken.

I suppose every man who has seen much of this affection has tried phosphorus for it, and I believe many at least have reaped only disappointment. Part of this may be due to the fact that the doses usually given are too small. Any thing less than the twentieth of a grain three times a day has never, in any instance that I have seen, produced any particular effect so far as I could observe, and not unfrequently double this quantity must be taken.

Another cause of failure is that the phosphorus is not preceded by a course of quinine, and that the use of it is kept up far too long; according to my experience it is like the ergot, of little if any value except as an adjunct to other remedies, and should never be continued for more than from two or three to five or six weeks; the latter being the extreme limit of time. Even this may be too long, nausea, vomiting, and other very troublesome symptoms coming on at the end of three or four weeks, when the first signs of its disagreeing are neglected. A third cause is that phosphorus is so often given alone, whereas I think it should invar-

[1] ℞ Quiniæ et ferri citratis, ʒ i, Tincturæ cantharidis, ʒ i, Liquoris strychniæ, m. ii, Spiritûs ammoniæ aromatici, ʒ vi, Acidi citrici, gr. L, Aquæ ad ℥ vi. ℔. Cochleare amplum ter quotidie sumendum.

iably be accompanied by an aperient pill or saline, to be taken at least once or twice a week; given in this way almost any person can take phosphorus, and usually with benefit. On suspending the remedy ergot can be substituted, and after a time the patient goes through a second course of phosphorus, which is generally all that is requisite.

Employed with these limitations phosphorus may take rank among our reliable medicines for impotence. In one case where the patient was improving while taking it, I twice suspended the medicine for the sake of experiment; both times the amendment came to a stand-still, and both times, on renewing the employment of the medicine, the patient expressed himself decidedly more satisfied with his condition. Another patient, whose case looked at one time very unfavorable, his age being near forty and the weakness having begun at an early time of life, and lasted for some years before he put himself under my care, derived marked benefit from the use of this drug. As to the mode of administering it, I think that, without exception, the pills made by Mr. Cox of Brighton offer the best medium. They keep extremely well and are made up of the strength of $\frac{1}{32}$, $\frac{1}{30}$, $\frac{1}{24}$, $\frac{1}{16}$ of a grain. A gentleman, describing himself as extremely nervous and long afflicted with emissions, told me that he derived great benefit as regarded both affections from the use of Kirby's unoxidized phosphorus, in doses of a thirty-third to the thirtieth of a grain. I tried it in several cases and found it, looked at as a specific, disappointing in the highest degree; and used as an adjunct, of much the same value as phosphorus taken in other shapes. Hammond recommends as the best form phosphide of zinc, a tenth of a grain three times a day in a pill.

Dr. Kirby tells us[1] that spermatorrhœa acts like overwork and excessive mental strain. The primal cause of disease is the same in both, great waste of phosphorus; while the characteristic of both is loss of nerve power, to remedy which phosphorus should be given. If by overwork be meant studying and writing too long, then I must contend that the argument is wholly at fault; I have never seen the symptoms of spermatorrhœa set up by hard study unless spermatorrhœa itself was present. Work pushed to excess will sometimes bring on dyspepsia, sleeplessness, and inability to bear a prolonged mental effort; but on the whole it is very well borne, and does infinitely more good than harm. Many of our famous men, who have committed great excess in the ways of study, have worked on to a good old age, showing no particular marks of weakness, either mental, bodily, or generative; the strain of spermatorrhœa could not be endured in this way. Rest in due time and change can generally be trusted to neutralize the effects of mere overwork, they do little or nothing in spermatorrhœa. I don't know how phosphorus is visibly extruded in overwork unless it be in the shape of phosphatic urine, and

[1] On the Value of Phosphorus, 1881.

that is not a necessary result. As much phosphorus is discharged in the act of connection as in an emission; the very same person will be relieved by the one and prostrated by the other. I see no reason to believe that there is such a thing as nerve power at all;[1] and the argument that loss of phosphorus is to be remedied by throwing this substance into the system is an entire mistake both in theory and practice. It would be as sound reasoning to contend that sugar is the medicine for diabetes. The object in giving phosphorus for exhaustion is not to renew the supply but to arrest the waste. Dr. Bartholow is quoted by Dr. Kirby as saying that "we have no remedy more efficacious in the treatment of impotence than phosphorus;" and the latter author tells us that by means of it and electricity "impotence is speedily cured." I must entirely differ from these gentlemen. I have repeatedly given Dr. Kirby's preparations, and though he tells us that they are thoroughly "dependable," and that the process by which they are made is "perfect," and though I have often pushed them to the extent of making the patient thoroughly ill, the result was only too often either complete failure or a very slight degree of benefit. Lastly, my experience is that impotence is only very seldom speedily cured by any remedy or any system. In saying this, however, I entirely disclaim making any attack on these particular preparations; what I assail is the system of vaunting as specifics medicines which have never been shown to be such, and bolstering up their merits by means of theories, the starting-point of which has not been proved.

Whether the patient is taking quinine or steel, cod-liver oil may be at the same time administered during cold weather; it is not however suited to a hot or even warm season. The only oil, however, I should be disposed to place any reliance on, is De Jongh's. In hot weather the hypophosphite of soda, in half-scruple doses, may be tried as a substitute, but my experience of it has not inspired me with any high opinion of its merits, whereas from the oil I have seen benefit. When the patient cannot take the oil, rum and milk at bed-time, early in the morning can be substituted, and the patient should have some red wine every day, avoiding beer as he would poison; here, as in spermatorrhœa, I have often seen claret of service, while I never saw any form of malt liquor beneficial. The only remaining drug from which I have reaped any good is the ergot of rye, which should be given as directed for spermatorrhœa.

Having heard that the Russian castor possesses considerable power in restoring the vigor of erection, I resolved to try it carefully; I found, however, that it was not to be had in London, except, perhaps, as a specimen here and there in a museum. I sent to Apothecaries' Hall, and to nearly all the leading wholesale druggists; but the collective information obtained was to the effect that none had been imported into England for

[1] The Laws of Life.

quite forty or fifty years, and that the remnant of the stock had long been sold out. In Pereira's time it had become so scarce that he paid £2 per ounce for a museum sample. I applied to a large Russian merchant, who kindly made inquiry for me, and his answer confirmed that given by the druggists. No castor he said had been imported from Russia for many years, nor could any be procured at present, whatever price were offered for it, before the fair at Nijni Novgorod. Under such circumstances, those retail druggists, who secured such apparently inexhaustible supplies, must be congratulated on their foresight. Pending these inquiries, I on two occasions prescribed Russian castor, and was assured by the patients that they had the medicine made and that they took it regularly; and I have kept with great care a prescription of the same kind, which the patient averred he had had made up fifteen to twenty times, and which was written by a medical man who was in the habit of prescribing the Russian castor at least every week, and never yet had the slightest difficulty in getting his prescriptions compounded.

Phosphide of zinc in doses of one-twentieth to one-fifth of a grain three times a day, and cimicifuga (actæa racemosa) in fifteen-minim doses of the fluid extract three times daily, are said to have been very useful. Jaborandi, too, thirty minims of the fluid extract morning and evening, is highly spoken of. So far my own trials with these remedies have not answered well.

Since the last edition of this work was written, I have tried galvanism in a number of cases, and in some instances I think with benefit. The forms of apparatus employed were the same as those used for spermatorrhœa—that is to say, a hundred-celled Becker Muirhead batery, used however only in three cases; Smee's battery once, not seen by myself, the case being only reported by the patient; the magneto-electric apparatus several times. Although the patients were most persevering in the employment of the remedy, and gave it every chance of success, the result fell very far short of what has been reported by some writers; for I need scarcely tell the reader that there are men who conscientiously believe in the power of this agent, even when unaided, to restore lost virility. For instance, Dr. Beard, who has treated these subjects with so much care and ability, says[1] that if restricted to one remedy for nervous exhaustion, with which many cases of impotence must certainly be classed, he would choose electricity. Dr. Julius Althaus mentions[2] several cases in which impotence was cured by the continuous current of the voltaic pile, shocks from the Leyden jar, faradization of the testicles and spermatic cord, and galvanism; so that we are scarcely likely to go wrong in our choice if we can only accomplish the more difficult part of the task,

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[1] Neurasthenia (Nerve Exhaustion), with Remarks on Treatment, p. 2.

[2] Op. citat. 1870, p. 620.

and induce the patient to go through a course at all. When there is a want of erectile power, he considers faradization of the ischio-cavernosus and bulbo-cavernosus muscles useful, and gives a case of cure by this method. When impotence is due to an exhausting cause, such as over-study, he recommends, along with general treatment, the continuous current to the lumbar spine. Mr. Curling finds the interrupted faradic current useful in impotence.[1]

In the third edition of his work Dr. Althaus relates[2] some cases of impotence cured by Westring, Stacquez, and others, with the continuous current, faradization, and so on; in fact, so far as I see, he repeats pretty exactly what he said three years before. He advises general treatment to be combined with electricity where impotence is caused by mal-nutrition, diabetes, syphilis, lead-poisoning, or the habitual use of opium and hasheesh, excessive tea or coffee drinking, by over-study and similar causes. The form of electricity to be used here is catelectrotonus of the lumbar cord, with galvanism to penis and testicles; galvanism of the spinal cord may restore the sexual energy where it is lost from disease of the spinal cord. He thinks it possible that electricity might improve or cure deficient secretion of semen, always supposing that this deficiency is due to paralysis of the secretory nerves of these organs, and not to changes in the structure of the testicles from cancer, tubercle, etc. This does not open up a very encouraging prospect for patients suffering under this affection. The varieties described by Dr. Althaus as being beneficially influenced by electricity, do not, with the exception of those brought on by over-study, form a fiftieth part of the cases seen in actual practice. About the latter the author gives us no information which would enable us to judge as to when electricity succeeds and when it fails; there is nothing like an attempt to estimate the percentage of cure, and the one case recorded by the author as an instance of success dates as far back as 1858.

Impotence offers peculiarly an arena on which we might expect to see the power of electricity displayed to advantage, and it is much to be regretted that more has not been done to utilize so powerful and valuable a remedy, especially as we are not met here by the same obstacles as in spermatorrhœa, many of these patients having more command of time and money, whereas that is often enough not the case with the others. One hindrance in the way of drawing any safe conclusion is that we find irreconcilable differences of opinion as to the best mode of employing electricity, and as to the value of galvanism. One gentleman, who had evidently given a great deal of attention to the matter, said that he did not believe any good ever had been or could be effected without a large surface, large conductors and very gentle current; volume not force being

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[1] Op. citat. p. 429. [2] P. 668.

what was wanted. Dr. Hammond is strongly in favor of the urethral cathode and statical electricity, drawing sparks an inch long from the generative organs, and three or four inches long from the spine. In a case accompanied by emissions, treated in this way, the effect of electricity being seconded by use of bromide of sodium, pepsine, and pancreatine, with monobromide of camphor at bed-time, the emissions entirely ceased on the fifth night. Mondat's idea of exhausting the air from a receiver in which the penis is placed, tried many years ago I believe by Dr. Dick, is based on a fallacy. Dr. Hammond says[1] he has tried it in several instances and never knew it do any good. At one time I tried the galvanic belt extensively, and many of my patients saved me the trouble of any experiments by trying it themselves,—in both cases with the same result. I never saw an instance in which this apparatus did the least good.

One of the greatest difficulties in the treatment of impotence is to overcome the apathy of many persons thus affected, especially if they are at all advanced in years. They seem to grow quite indifferent to the prospect, as if they would rather know the worst than find out a ray of hope; hypochondria masters them so completely, that I have frequently heard men of thirty-five talk about their being too old for cure, and, to judge from their mode of expressing themselves, rather liking such a conviction.

The action of medicines requires to be aided here, as in spermatorrhœa, by diet and chastity. Abortive attempts at connection are worse than useless. Unfortunately, the idea has gained ground that marriage is, after all, the remedy. A self-indulgent man easily persuades himself that abstinence is the cause of what he calls temporary impotence; and numbers of patients not only take this false step before being cured, but persist in trying to have connection long after they have begun to notice that every essay of the kind, whether successful or not, is followed by an aggravation of the symptoms. Dr. Hammond most justly censures the conduct of those medical men who make such an affectation of decency about the subject, and yet advise marriage in these cases, often to the ruin of happiness on both sides. Unfortunately too an idea prevails that this loss of power can always and at any time of life be set right by a few doses of medicine, without any attempt at perseverance and self-denial on the part of the patient, who not unfrequently complains at the end of a week or two that he is no better! But the truth is that it is scarcely ever an easy, and not always a possible, task to undo the mischief. In young persons the evil is not so serious, and soon repaired with a little attention; but it is melancholy to see the effects of this false impression upon the minds of old men, who, after having been long impotent, fancy that the surgeon can resuscitate the power forfeited by years of over-

[1] Op. citat. p. 208.

indulgence, and, blindly pursuing this delusion through every disappointment, turn aside from the reasoning of those who seek to convince them of their error. So long as they notice an erection in the morning, they flatter themselves that their virile power is only in abeyance, and requires merely its natural stimulus in order to recover its early strength. But the symptom should really be interpreted as meaning that the patient's state offers a fair chance of restoration; not that it will get well of itself without anything being done for it either by himself or others.

And now, as a parting word, I would urge the surgeon to impress upon the patient to remember, that youth is peculiarly the season for cure, and that in this, perhaps more than in any other case, hours fly quickly, and once flown can never be recalled. Life is but a long day, and passes like it.[1] Those who, like myself, have often listened to expressions of regret at unprofitable waste of time and forfeited opportunities of retrieving the past, may be excused if they seek to warn others by an experience which they will buy only too dearly. But at no period of life is anything to be gained by delay; it only means waste of time and money, health and happiness. To hope for the best and in the meantime do nothing towards attaining it, may indicate a confiding and cheerful disposition, but it is not the way to grapple with a difficulty; such a frame of mind is no doubt praiseworthy in the highest degree—the drawback is that it will not supply the place of that decision which is so necessary here. For the exercise of that decision, too, a man is all the better. To yield supinely to a misfortune is to renounce the exercise of judgment and resolution; to bend every nerve to master it calls into play some of the highest qualities of the mind. Nor do I see anything impracticable in the suggestion that such an effort should be made; there is nothing called for at the hands of the patient, beyond what men do every day of life for ends less important than the recovery of health.

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[1] "So passeth in the passing of a daie
Of mortall life the leafe, the bud, the flowre."

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