hard amber-coloured nucleus, filled the anterior chamber, and partly adhered to Descemet's membrane by two spots at its lower portion. The iris was completely pushed out of sight and covered by the lens. I extracted by a small flap. He was cured, with good sight.

CASE IX.—As a type of our unsuccessful operations, may be mentioned the following. Miss B., aged 19, cloakmaker, by an accident had a steel pen with ink driven into her left eye. On presenting herself a few hours after the accident had occurred, the cornea was found muddy, the iris lacerated, and the lens opaque and partially torn. There was excessive pain, photophobia, and lachrymation, followed next day by œdema of the upper eyelid. The lens was partially removed by a linear incision with Graefe's knife, whereupon the symptoms of panophthalmitis considerably diminished, but ended ultimately in atrophy of the eyeball.

I may here remark that, in cases where the mischief is too serious for recovery, there are peculiar features of the eye, which, in their ensemble, I may be allowed to designate *disorganising physiognomy*, readily recognisable, and indicative of extensive and deep-seated inflammation; viz., cloudiness of aqueous humour; dry look of the iris, if not actually amounting to change of colour; injection of the ciliary circle, causing an appearance of constriction round the lens; a muddy look about the cornea. The amount of damage, in fact, may be measured by the extent to which the cornea is involved, as that tissue, when inflamed, is far less amenable to treatment than the other tissues of the organ. But it is of the highest importance to notice the appearance of the lens. In favourable cases, the lens is tumefied, and acts as a foreign body, and the other tissues are only thus far implicated in their attempt to extrude that offending substance; whilst in unfavourable cases there is proliferation of the epithelial cells of the capsule; the capsule itself is thickened; while the lens is considerably shrunk, and grasped by the gorged iris, zonula, and ciliary processes. In short, in the one case the lens acts as an irritating foreign body; while in the other all the tissues of the eye are more or less implicated, and the lens becomes atrophied, and has no share in the inflammatory process.

[To be continued.]

ON SPERMATORRHOEA AND ITS TREATMENT.*

By GEORGE G. GASCOYEN, F.R.C.S.,

Surgeon to the Lock Hospital; Assistant-Surgeon to St. Mary's Hospital.

MR. PRESIDENT AND GENTLEMEN,—The subject which I have selected for the paper this evening is not altogether an agreeable one; but I make no apology for bringing it before you, as the Harveian Society has on many previous occasions shown that it considers the utility rather than the niceness of the subjects it takes up. I need only refer to the frequent discussions on venereal diseases which have taken place in this room, and remind you that in this Society originated the movement which has culminated in those most useful, though now much maligned, Contagious Diseases Acts; whilst it was owing to a paper read here by one of your members that baby-farming and its horrors have at length been forced upon the attention of an unwilling public. I have, then, precedent for choosing a somewhat uninviting subject for discussion to-night, and I do so without reluctance, because I think it particularly well suited for a practical society such as this; and because it is one which has of late been so much avoided by the profession as to have become to a great extent the property of those who may be termed the illegitimate practitioners.

When I first turned my attention to venereal diseases and made them the more especial object of inquiry, I read, of course, Lallemand's work, *Des Pertes Seminales Involontaires*, which, since the publication of its first part in 1836, has been the great authority on—I may almost say the father of—spermatorrhœa; at any rate, it has been so in this country, for it was a complaint scarcely known here until the issue of his book. From him I learned how common, how insidious, how destructive, was this little suspected affection; and I commenced my work in the out-patient department of the Lock Hospital, in the full conviction that I should speedily meet with overwhelming evidence of the fearful consequences of this disorder. I made, therefore, a practice of keeping back those patients who attributed their symptoms to masturbation, or who stated, to use their own phrase, that they were "suffering from nervous debility;" and I afterwards made a careful separate examination of these people, either at my own house, or when the other patients had left. I have continued to do this up to the present time whenever a good opportunity has occurred to me, either in public or

private practice, so that I have managed to secure an examination of a large number of persons who believed themselves to be the subjects of spermatorrhœa; and the conclusion at which I have arrived is that, although a good many patients present themselves for treatment with nocturnal emissions and occasional losses of semen, yet the great majority of them are suffering from an unnatural excitation of the genital system, produced and kept up by mental causes, rather than by structural changes in the organs themselves, or from any real physical incompetency on the part of the patient. And I am quite satisfied that the involuntary seminal discharges, which have been described as leading to a state of progressive physical and mental decay, must be of extremely rare occurrence even if they have an existence, which is with me a matter of doubt. I have never yet met with such an instance, and I am fully persuaded that they are to be met with in the suggestive pamphlets of those who prey upon this class of patients rather than in reality.

With regard to Lallemand, it seems to me that he was trying to deceive himself: he had mounted a hobby, and rode it to death; he imagined that he had discovered the cause of all the obscure symptoms met with in practice, and could explain every difficult and complicated case by referring it to the frequent and unsuspected loss of semen; but I think that any unprejudiced person who will take the trouble to go through the 150 cases upon which he seeks to establish his hypothesis, must feel that he entirely fails to do so, and that the symptoms detailed can be better explained by other conditions which were present in these cases than by the loss of semen. To my mind, his book is a striking example of how an able man can mislead himself when he has a theory to prove, and how he can unconsciously wrest facts and symptoms from their plain simple meaning to interpret his own preconceived idea.

Much harm has, I believe, been done by the publication of this work; for it was at once seized upon as their text-book by that herd of charlatans who fatten upon the vices and fears of men, and it has proved an inexhaustible mine of wealth to the authors of shilling books on "Nervous Debility," to "The Silent Friend" of society, etc. These benefactors of the human race invoke Lallemand as their high priest; they quarry in his book for material for their own, and shelter themselves under the shadow of his name. Thanks to their popular expositions of his work, and their widely spread advertisements, the male portion of the public has become almost as familiar with the word spermatorrhœa as it has with gonorrhœa; whilst the symptoms of the disease and the awful ending foreshadowed for those who decline the assistance of the disinterested authors of these pamphlets are better known and hardly less dreaded than those of phthisis itself. Nearly all the patients who consult us for this class of affection have previously read one of these books, and it is quite easy to detect those who have done so by the glib manner in which they describe their symptoms, and by the half technical terms they use. Many even will at once say that they have reached such and such a stage of nervous debility, and will produce their favourite author to show chapter and verse in confirmation of their statement. This seems to us very ludicrous, but it is no laughing matter for them, as their existence is embittered by it to an extent almost impossible to credit; some become confirmed monomaniacs, and ruin themselves in their endeavours to be cured of an imaginary complaint, and very many can never get over the horrible shock experienced when they first read one of these alarming effusions; the impression remains for years or throughout life, and, in spite of themselves, every dyspeptic trouble or nervous sensation is referred in some way or other to that much dreaded affection spermatorrhœa.

Until the last few years, the standard English works on surgery were silent on the subject of seminal losses, whilst only a few of the more modern ones even now refer to it, and these in a most cursory manner—showing that it is a complaint of very recent innovation, and as yet its existence as a disease has not been satisfactorily proved to the writers. They allude to the injurious effects of repeated masturbation or excessive sexual indulgence, and to the nocturnal emissions and irritable condition of the genito-urinary organs induced by these practices; but they do not even hint at the distressing symptoms, or terrible ulterior consequences which have been described by Lallemand and his copyists; and I do not think they can be accepted as proved.

That phase of the disease in which it is stated that there is an almost constant discharge of the spermatic fluid without the knowledge or control of the patient, attended by very varied symptoms, yet all of them indicating extreme prostration, and which, if unchecked, will certainly terminate in imbecility, insanity, paralysis, or death, is based at present almost entirely upon Lallemand's series of imperfect cases, without much other confirmation than that obtained from the men who trade upon this hypothetical condition, and whose statements must therefore be received with great circumspection.

It is true that our lunatic asylums afford but too many examples of

* Read before the Harveian Society, December 7th, 1871.

mental derangement in persons who have been addicted to masturbation and sexual excess—the former more particularly—to leave much doubt that these practices may produce cerebral disturbance. It is not, however, the actual loss of the semen which occasions the mental degradation, but it is the extreme nervous exhaustion which follows on the sexual act when too often repeated, and which becomes increasingly severe and prolonged in proportion as a stimulus of greater intensity and duration is required for the completion of the act. The physical and moral condition of a person who has frequent seminal losses, however produced, is exactly that of a man who has broken down in body and mind from overwork, the only difference being a greater excitability of the genital system in the one than in the other; but in all other respects the symptoms which have been given as characteristic of spermatorrhœa are precisely those which accompany the loss of nervous power from any cause whatsoever. Without now entering into a description of these symptoms, I will merely say that it is the digestive function which more particularly suffers from repeated nervous depression, so that dyspepsia and hypochondriasis soon hold revel in such patients. The result of this is an imperfect nutrition of the body, with impairment or perversion of its functions, and of those of the brain especially, as manifested by loss of energy, want of application, weakening of the mental power, and a general excitability which is often quite uncontrollable. This functional disturbance may, if long continued, ultimately result in some form of organic mischief in the brain itself.

There is no doubt that a constant or excessive discharge of any excretion or secretion will cause enfeeblement of the system and derangement of the general health; but I cannot admit the assumption that it is the loss of semen which constitutes the *foens et origo mali* in those persons who are suffering from the effects of seminal emissions, or that these discharges occasion such a drain upon the system as to excite the functional disorders present in such cases.

With regard to the condition where there is said to be a constant loss of semen without the cognisance of the patient, and which, if it existed, would constitute a real case of spermatorrhœa, I have never yet met with an example of it. The glairy transparent fluid, which will issue from the meatus when there is a congested state of the urethral vessels, is seen on examination to be mucus without spermatozoa; and though, after excitement, a few of these animalcules may be found scattered through it, their presence cannot be regarded as indicating any abnormal condition, as it is constantly associated with perfect health and full vigour of the genital organs. It is true that the discharge takes place without the knowledge of the person, and so may be called an "involuntary seminal discharge," but it certainly is not a morbid act, nor is it dependent upon any abnormal state of the parts. The same may be said of those oozings from the penis which sometimes take place during evacuation of the bowels. I have many times examined this fluid, and although now and then a few spermatozoa may be detected in it, generally there are none; but even if they were found more plentifully, this would not be evidence of an unnatural condition of the organs of generation, for the straining sometimes necessary to empty the rectum must cause compression of the seminal vesicles sufficiently to expel their contents more or less completely.

The urine, too, in persons who are suffering from nervous exhaustion or certain forms of organic derangement, is often turbid, thick, loaded with sediment, which may consist partly of mucus or pus. This, without any microscopic examination, has been spoken of as semen; and, in cases of supposed spermatorrhœa, the spermatic fluid has been said to be discharged with the urine, but with no more evidence of the fact than can be obtained by the eye or the test-tube. Sometimes the last few drops of urine may be thick and slimy, requiring a certain amount of effort to void them, and this, too, has been called semen, but without microscopic proof.

Yet often spermatozoa may really be present in the urine, particularly in that collected in the early morning for the purpose of examination, and always so in large numbers when there has been a seminal emission. They may also be found if the genital organs be in an irritable condition, or after strong sexual excitement, even without an emission; but it is not surprising that a few spermatozoa should under such circumstances escape into the urethra and be washed away with the urine. When too much straining is required to expel the last drops of urine, a few of these animalcules will sometimes be forced out with it, in consequence of the muscular compression of the vesicles, as well as of the bladder. The fact, therefore, of spermatozoa being found in the urine does not necessarily indicate an abnormal condition of the genital organs.

As a rule, I consider that the presence of spermatozoa, *under any circumstances*, shows a healthy state of the secretive organs rather than the reverse; and if they be lively, numerous, and well formed, we may rest assured that the testicular function is not impaired. I am,

moreover, satisfied that when the semen is in this condition it cannot be discharged without the knowledge of the patient, at least in such quantity as will be injurious to him; so that, from my point of view, the presence of spermatozoa—which is the very fact relied upon as evidence of a morbid state of the sexual organs—is really a confirmation of their healthy structural condition. The thin imperfect fluid ejected by those men who devote themselves to sensuality often does not contain spermatozoa, or else a few broken specimens which are quite torpid or dead; but even with these patients it is very rare that they are not aware of its passing—except, perhaps, during sleep—and it is attended by some amount of pleasurable sensation, though always less than when the semen is perfectly formed; for it may be accepted as a fact that, the more perfect and active the spermatozoa, the more intense is the sensation produced by the emission of semen. When the seminal secretion in a young man is ill-formed and watery, the sexual function becomes analogous to that which obtains in advanced life, and the fluid discharged is almost precisely alike in both instances. We may then fairly consider that when a man, from any cause, has weakened or worn out his generative system, he is in exactly the same condition sexually as an old man whose organs have failed from natural decay; but it is the nervous force which has first given way, followed by loss of function, and then by structural changes in the organs. The absence of spermatozoa does not of necessity render a man incapable of coition, although it always destroys his power of procreation. Many individuals will for years continue to have connection, and yet a microscopic examination of the fluid discharged gives no trace whatever of spermatozoa. It would seem as if, in such instances, the testicles take but little, if any, part in the act, and the condition then is very similar to what has been observed occasionally in those persons who have had their testicles removed for disease or other cause; in eunuchs, again, who have been made so after reaching adult age; and in animals which have been castrated after maturity, especially when they have been used previously for breeding purposes. In these the power of coition, but never of procreation, will often remain, though it is generally much enfeebled.

The presence or comparative absence of normal spermatozoa in the semen accounts to a great extent for the varying power of erection possessed by different individuals; those who have a copious discharge of well-formed semen, possess the faculty of copulation to a much fuller extent than others who have only a scanty emission, and the amount of gratification experienced by them is also much greater. Well developed and lively spermatozoa appear to act as a healthy stimulus to the genital function, to intensify the sexual desire, and to render the performance of the act not only more frequent, but also more perfect. When the power of coition begins to diminish, we may infer that the amount of spermatic fluid discharged is lessened, and that an alteration has occurred in the quality, as well as in the quantity; and if an examination can be made, it will probably be found that the number of spermatozoa is comparatively small, their movements sluggish, their formation imperfect, or they may be motionless and dead. They may even be altogether absent; and, if this be the case on several examinations, we may be sure that it is the testicles which are at fault, and that some morbid change has occurred in these glands. If, however, spermatozoa be present, yet ill-developed, inactive, or dead, we may conclude that some other part of the generative apparatus is deranged rather than the testes.

When no spermatozoa can be found in the fluid emitted, it is evident that the usual secretion of the testicles is suspended or entirely arrested, and the fluid discharged is therefore no longer *semen*. Under the microscope, it is seen to consist of mucus-corpuscles, epithelial cells of various sizes, with some granular matter, and perhaps a few brilliant oily-looking globules, floating in a transparent fluid; or sometimes this fluid will be opaque, and present almost a hyaline appearance, which masks the other constituents, even if they exist. This is nothing more than a mucous secretion from the urethra and glands opening into it, which is temporarily increased by sexual excitement—*i.e.*, by nervous stimulation of the parts through mental emotion—and it is discharged during intercourse in precisely the same manner as if it were semen, although with a slighter amount of orgasm. The loss of mucus from the genito-urinary passages can, *per se*, cause no greater drain upon the system, nor produce greater nervous exhaustion, than does the loss of an equal quantity of mucus from the bowels or the nose; and yet the sense of fatigue, of general physical prostration, is not only as great as, but often greater than, that occasioned by the emission of normal semen. If, then, semen be not discharged—and by *semen* I understand essentially the fertilising secretion of the testes—and yet the same physical depression be produced which always temporarily follows a healthy emission, it cannot be the loss of the spermatic fluid which occasions the general exhaustion; nor yet can it be the loss to the system, as some have asserted, of those particular ele-

ments of the blood which are abstracted by the testicles to form the semen; and it must, I think, be attributed to the general excitement and subsequent depression of the nervous system, rather than to the actual loss of the spermatic secretion. If this be admitted as the cause, we can at once account for all the symptoms, local and general, organic and functional, physical and mental, which accompany or follow sexual abuse, or attend a real or imaginary derangement of the genital system.

By calling to mind the nervous distribution to the parts, we shall readily understand how very slight causes may occasion seminal emissions, and especially if there be an irritable condition of the genital nerves, as is nearly always the case in these patients. The generative and cerebro-spinal systems in such cases act and react upon each other until a state of reciprocal excitability is established, giving rise to various disorders which are at first functional, but ultimately may become organic.

Dissection shows that the testicles are supplied by sympathetic filaments from the spermatic plexus, which, lying upon the aorta about opposite the second lumbar vertebra, communicates through the upper lumbar ganglia of the sympathetic trunks with the first and second lumbar nerves. From these spinal nerves, or from the cord connecting them, proceed the ilio-inguinal and the genito-crural nerves—the former supplying, amongst other parts, the skin over the lower part of the abdomen and the mons veneris; whilst the latter are distributed to the coverings of the spermatic cords and testicles, and to the skin of the upper and inner part of the thighs. The vesiculæ seminales, prostate gland, urethra, and body of the penis derive their sympathetic supply from the hypogastric plexus, which has its chief spinal attachments to the third and fourth sacral nerves; whilst small twigs from the same source creep along the vasa deferentia, and, joining with those from the spermatic plexus, pass to the testicles with them. From the same cords of the sacral plexus (the third and fourth) proceed the internal pudic and lesser sciatic nerves—the former of which gives branches to the urethra, body and skin of the penis, scrotum, perinaeum, and anus; whilst from the latter twigs pass to the perinaeum, root of the scrotum, buttocks, etc. It is easy, then, to understand from these nervous connections how the sympathetic system may be influenced through the sentient cutaneous nerves of and about the genital organs.

Erection of the penis and emission of semen are due to a reflex action. On the application of an excitant to the sensitive nerves of these parts, the impression is conveyed to the brain and reflected along the centrifugal or motor nerves to the muscles concerned in the act of erection, and is also carried by the sympathetic trunk to the vaso-motor nerves of the reproductive organs. A large and sudden afflux of blood consequently takes place to the sexual apparatus, and the muscles, contracting at the same time, compress, and prevent the return of the blood through, the dorsal vein of the penis, thus causing distension of the erectile tissue and erection of that organ. A larger sentient surface is by this means exposed to the friction of intercourse, and the impression upon the peripheral nerves, and therefore upon the nervous centre, is rendered more intense.

[To be continued.]

DEATH OF "MASTER MAGRATH."

By the REV. SAMUEL HAUGHTON, M.D. Dubl., D.C.L. Oxon.,
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NO. I.

HAVING obtained permission from Lord Lurgan to make a minute examination of Master Magrath's remains, I propose to lay the results before the readers of the BRITISH MEDICAL JOURNAL in a few short papers. In the present communication I shall give his medical history and some facts connected with his viscera.

Master Magrath died at the kennels of Brownlow House, Lurgan, county Armagh, after three days' illness, at 9.30 P.M., 24th December, 1871. He was subject occasionally to tapeworm, from the time that he was a pup, and would have been six years old, had he lived to appear at the Waterloo Meeting in February, 1872. For this ailment he was usually treated with areca nut, castor-oil, and syrup of buckthorn, followed up by tonic pills, which appeared to me, from the taste, to consist chiefly of tannic acid and spices. He was also, occasionally, after taking medicine, or after a hard course, subject to muscular cramps, affecting chiefly the fore-legs and abdominal muscles. With these exceptions, he enjoyed good health for the first four years of his life. About two years ago he got a strain in a private course, without any

external injury, and was very ill for a fortnight. Two days after he suffered this injury he vomited blood, and passed blood by the bowels, altogether nearly a pint; he subsequently became as well as before, and never afterwards showed any ill-effect from this accident.

On Friday, 22nd December, the dog was noticed to be suffering from tapeworms, and had the usual medicines, which removed a large quantity of worms. On Saturday he had one tonic pill, and seemed to be as well as usual. On Sunday, however, the dog grew worse, and refused to rise from his bench; his breathing seemed to be oppressed, and he was treated with mustard rubbed into his chest, and clothes, wrung out of hot water, were wrapped round the chest. The dog grew worse towards evening, and began watering from the mouth, and finally died at 9.30 P.M. In dying, he snapped once with his teeth and slightly bit his tongue. He did not pass urine at the moment of his death.

The foregoing history is given as it was stated in the evidence taken in the investigation made as to the cause of death, on Tuesday, 26th December, in the afternoon. The evidence was taken before Mr. John Hancock, J.P., and was written down by me, the witnesses being John Walsh (trainer), Hon. William Brownlow (Lord Lurgan's eldest son), and Mr. Abercrombie, who was a guest at Brownlow House; these two gentlemen witnessed poor Magrath's actual death.

The necropsy was made, after the foregoing evidence had been taken down, by myself, assisted by Mr. Bray, veterinary surgeon, of Lurgan. The result of the investigation is contained in the following statement, which I placed in Lord Lurgan's hands:—"On opening the abdominal cavity, it was found to be nearly half filled with bloody serum; the viscera were healthy, with the exception of the liver, which was congested and of brittle texture. On examining the thoracic cavity, the heart was found to be enormously hypertrophied, but in other respects healthy; both lungs, especially the left, were occupied extensively with tubercular deposits, and pneumonia existed in both. The right ventricle of the heart was distended with blood. I consider death to have been caused by double pneumonia occurring in lungs already extensively diseased with tubercle, and also that the hypertrophied condition of the heart caused a state of health bordering on disease, and liable to pass into it on the occurrence of any disturbance of the equilibrium of respiration and circulation. The treatment employed during the dog's short illness was, in my opinion, judicious. There was no evidence whatsoever, either in the symptoms of the dog, or in the *post mortem* appearances, to justify any suspicion of poison having been administered."

I found it necessary to add the last sentence, in consequence of the absurd stories of poison and foul play which were current at the time of the dog's death, and in order to clear the character of young Walsh, who had charge of the dog.

On the 27th December I brought the remains of poor "Master Magrath" to Dublin, where his arrival caused some sensation at the railway station. On arriving, late at night, at the Anatomical School of Trinity College, to deposit my box, the following conversation occurred between myself and the cabman, who had assisted the porter and myself to carry in the remains.

Cabman—Is it thrue, yer Honor, that you have Magrath in that box?

Anatomist—It is.

Cabman—On your honour, sir?

Anatomist—On my honour!

Cabman—Glory be to God, sir; shure I shall never die poor, for I can always say that I dhrew the hearse at Master Magrath's funeral.

I shall now briefly discuss the *post mortem* appearances, and shall feel much obliged to any of your readers who may assist me in drawing inferences from them.

1. *Abdominal Cavity*.—The abdominal cavity was nearly half filled with bloody serum, and the liver was highly congested, and tore up on the least touch. Every thing else was healthy. The bloody serum was caused by the congested condition of the liver, which was itself only a symptom of the disease which caused death.

2. *Thoracic Cavity*.—The heart was enormously hypertrophied, but perfectly healthy. The left lung contained eight or nine tubercular nodules, varying in size from a hazel nut to a walnut; and the right lung contained five or six tubercular nodules of the size of a pea. I estimate that one-half the air space of the left lung and one-fourth that of the right lung was occupied by these nodules. On cutting into them they were yellow and not softened, and there were no grey tubercles or miliary tubercles present. The remaining portions of the lungs were highly congested, and the seat of pneumonia; and the right side of the heart was distended with blood.

In my opinion death was caused by the double pneumonia, occurring in lungs already extensively diseased by tubercle. I consider, also, that the character of the tubercles, combined with the short illness of the dog, excludes the supposition of tubercular pneumonia. If my opinion be correct, it becomes a question of extreme interest to medical men,