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.,
F.R.S., Trinity College, Dublin.

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,

what was the duration of the tubercular disease, and whether a greyhound could win a coursing match with tubercles in his lungs?

Master Magrath's last appearance in public was at Altcar, in February, 1871, when he carried off, for the third time, the Waterloo Cup (sixty-four dogs), and gave to Ireland the credit of having reared the most wonderful greyhound that ever lived. In October last he ran a private trial course with his kennel companion, "Master Nat", and beat him so cleverly that he was removed from the stud, and put in training for the Waterloo Cup of 1872.

It appears almost certain that the race in October must have been run when the tubercles had already begun to form in the lungs; and it is very remarkable to note, that surprising muscular efforts are compatible with fatal tubercular disease in the lungs. Amongst ourselves it is well known that the most brilliant brain-work is consistent with fatal tubercle.

The condition of the heart was examined by me with the greatest care; the semilunar aortic and pulmonary valves were tested under high water pressure, and found perfectly staunch; and the tricuspid and mitral valves were carefully dissected, and found to be perfect in every respect; the muscular tissue of the heart, and the pericardium were in every respect healthy. The following measurements were made by me:

1. Weight of heart	9.57 oz. av.
2. Diameter of aorta*	0.732 inches
3. Diameter of pulmonary artery*	0.796 "
4. Mean thickness of right ventricle†	0.20 "
5. Mean thickness of left ventricle†	0.96 "

The average weight of man's heart is 9.39 oz. and the average weight of man is 150 lbs. Master Magrath's running weight was 54 lbs., from which it appears that the celebrated "black" possessed three times the heart force of a man. I believe that Master Magrath's great heart (like the Nazarene locks of Sampson's hair) was the real cause of his extraordinary running powers.

3. *Cephalic Cavity.*—The brain was found to be congested, the result of the pneumonia, and it was found to weigh 3.87 oz. av. On comparing the brain with such other brains of dogs, as I was able to procure, I consider that its convolutions are somewhat better marked than usual.

In conclusion, I request the readers of the JOURNAL to send me the weights of heart and brain of any greyhound they can procure; or, still better, to put the dead greyhound in a box, and forward him to my address, Anatomical School, Trinity College, Lincoln Place, Dublin. I shall return my best thanks to the donors, and gladly pay the expenses of transmission.

PRACTICAL OBSERVATIONS ON OPHTHALMIC AND AURAL SURGERY.

By ERNEST HART, Esq.,

Late Ophthalmic and Aural Surgeon to St. Mary's Hospital.

I.—PHOTOPHOBIA IN SIGHTLESS EYES.

In arranging lately my note-books of the last ten years, I have marked a few cases which seemed to me to suggest some useful hints in practice. I propose briefly to extract a few of these for the purpose of publication.

Photophobia without Vision.

Three hospital cases of which I have notes, in which intense photophobia persisted after sight was destroyed, remind me of a fourth case, in which the want of knowledge that this may occur was the cause of some annoyance to an able practitioner. This gentleman consulted me, at the instance of Mr. Coulson, respecting a child of wealthy parents who had met with a serious accident many weeks before. The right eye had been seriously injured by the prong of a fork. The accident had been attended with great pain, much swelling of the eyelid, and severe photophobia. These circumstances and the somewhat wayward and passionate character of the child had probably prevented a very minute examination of the eye at the time of the accident by the family attendant, who, however, came to the conclusion, after an examination, that the injury to the eye was superficial. Means were taken to subdue the inflammation by leeching, cold applications, etc.; but some weeks passed away, and a good deal of inflammation, with intense photophobia, still persisted. When I was called in consultation, some eight weeks after the injury, there was a good deal of photophobia, some

weeping, and excoriation of the cheek. The child was very passionate, and resented any attempt at forcible separation of the lids and examination of the eyes, in which she was supported by the parents. I of course declined to prescribe for an unseen malady, and was allowed to fix the head of the child between my knees, and to separate the lids by retractors, so as to afford a good view of the globe of the eye—the only way in which a satisfactory examination can be made under such circumstances. Greatly to my surprise, after the history given, and to the indescribable consternation of the medical attendant, it was then apparent that the eyeball was shrunken, the cornea much atrophied and opaque, and the ball entirely sightless. He was in no way prepared for this; and, indeed, relying upon the intensity of the photophobia as indicating visual acuteness, had not prepared the parents for any loss of sight, but led them to expect the contrary condition and an early and favourable termination of the case. The position was very embarrassing, and we got out of it as well as we could, by a little cautious temporising, and ultimately without any damage to his credit.

But I have found since that a similar belief to that which misled him prevails more generally, and is sometimes productive of similar annoyance. I saw, about two months since, with my able friend Dr. Fyfe of Brompton, a patient who had suffered a recent injury to the eye. There was loss of vision, owing to the traumatic opacity of the lens, but great photophobia; and the intolerance of light had led to the impression that sight was not and would not be lost. It was, however, a case in which the ultimate prognosis was in many ways unfavourable, and we had to correct the promise of vision which the extreme sensitiveness to light had induced. A somewhat similar case I saw just before, in consultation with a medical friend of Dr. Bradley of Blackheath; and in this case also the extreme photophobia, following a smart blow from an exploding percussion-cap, had led to an impression that the sight was not injured, and that useful vision would return. The lens was displaced and opaque; the iris was matted with lymph, altered, discoloured, and opaque, and adhering to the corneal wound. The treatment had been quite judicious, but the prognosis too sanguine.

These cases have left on my mind the impression that a caution will be useful in some cases against drawing any deductions as to visual capacity, or prognosis as to the restoration of vision, from persistent sensibility of an injured and inflamed eye to light. This sensibility is enhanced by any injury to the sensitive surface of the eye, and is not only unconnected with the functions of the optic nerve or integrity of the optical apparatus, but is compatible with, and frequently accompanies, the destruction of the eyeball and total loss of vision.

OBSTETRIC MEMORANDA.

RETROFLEXION OF THE UTERUS.

DR. ATTHILL has mistaken the gist of my paper, if he think that I objected to the stem recommended by Dr. Beatty on the ground that it "increased the flow of catamenial and other discharges". All stems do this. It is the boxwood pessary to which I object. If the straight stem would remain *in situ* without any "flat boxwood pessary" in the vagina, I should never have proposed a "self-retaining stem", which is intended to do away with any such obstruction to discharge, lotion, examination, etc. I have not found the spring stem produce more irritation than any other kind, and I still believe it is the best mechanical support invented.

PERCY BOULTON, M.D.,

Physician to the Samaritan Hospital.

Seymour Street, January 6th, 1872.

EARLY RUPTURE OF THE MEMBRANES.

DR. THOMAS SAVAGE is incorrect in saying that all men engaged in obstetric practice must have observed cases in which the membranes ruptured upwards of two months before delivery. I have asked many obstetricians—Dr. Lloyd Roberts and Mr. W. Whitehead among others—and have not met with any one who has even heard of such an occurrence; neither am I aware that there is any mention made of the phenomenon in obstetric works. Dr. Savage is no less incorrect in the cause which he assigns; viz., verticality of the uterus. At least, it is certain that such was not the cause in the case I recorded, as the uterus was even slightly retroverted, a circumstance which was noted by Mr. Whitehead, who kindly examined the case with me. It is obvious that, if the uterus be vertical, the membranes over the os uteri must sustain a more than usual degree of pressure, and that they will consequently be liable to early rupture; and it is equally obvious that an unusual thinness of the membranes themselves will also tend to render

* The diameters of these arteries have the correct relative proportion for health.

† In order to obtain the mean thickness of the left ventricle, I took three equidistant measures; viz., 1, 1.05 inches; 2, 1.19 inches; 3, 0.64 inch; average, 0.96 inch. The right ventricle had an uniform thickness throughout.