looking man of fifty years of age, and exceedingly desirous of submitting to anything for the purpose of being relieved.

I came to the conclusion that, in consequence of the mercurial action, a portion of the os pubis had exfoliated; and, as the position seemed to correspond with the margin of the foramen thyroideum, that an abscess had extended from that part forwards through the adductor muscles and inwards to the perineum, opening the urethra in its course. I therefore advised him to return to Hull and remain there for a few days, that he might have the necrosed portion of bone removed. To this he consented.

Accordingly, on the 30th of April, 1853, with the assistance of Dr. Frazer of the 21st Regiment, then in garrison here, he was placed under the influence of chloroform, and the probe passed down to the sequestrum through one of the perineal fistulae. The sinus was freely dilated, a catheter having been first passed into the bladder and maintained there by an assistant as a kind of landmark. The necrosed bone could be readily felt; but it was too tightly held in its position to be removed by the forceps, though it was readily grasped, and was, to a certain extent, moveable. The region of the perineum seeming too limited to afford much scope for extricating the bone, I changed the plan of operation; and passing a probe into the highest of the femoral fistulae, dilated it very freely. Passing down my finger through the origin of the adductors, I came at last at a great depth upon the sequestrum. This, though readily caught by the forceps, could not at first be removed. The incisions were enlarged, a portion of the origin of one of the muscles was divided; the dead bone was then perceived partially surrounded by new bone. This was divided with cutting pliers, and then a piece of necrosed bone, of about the size of a filbert, was extracted. The operation was long and tedious, in consequence of the great depth from the surface, and the strong muscles through which a way had to be worked; but no ill result followed from the operation. The wounds went on healing kindly; and on May 3rd, the man returned home, the wounds granulating well, but urine still passing from them, especially from that in the perineum.

About a month afterwards, I heard that urine still continued to pass by the perineum; and since that time I have heard no more of this patient.

It is not, therefore, on account of the successful result that I have detailed this case, but as an example of the worst form of urinary fistula, caused by a portion of necrosed bone keeping up an amount of irritation that at length involved the urethra, and thus rendered the cure more difficult. I suspect that in this case considerable ulceration of the urethra had taken place. This, of course, could not be cured by the removal of the sequestrum; but the operation was justifiable, as removing the cause of the disease, and thus giving the only chance of ultimate recovery.

I have left myself little time to make any remarks, nor do I know that there is much to be said, except to point out once more that we occasionally have necrosis occurring in connexion with the cancelled extremities of the long bones, or in short bones, where it is not usually suspected; that it produces long-continued wasting discharge, and that (as in the last case) it may induce actual disease of important neighbouring organs, thereby still further obscuring the diagnosis, and rendering treatment less available. The first and last of the cases I have detailed obtained a place in my note book on account of the severity of the operations resorted to for their relief. But I ought to state that in this respect they form an exception to the ordinary run of such cases. The necrosed bone being detected, there is usually no difficulty in dilating the sinus and extracting it; and the second case presents, much more than the others, the ordinary characteristics of this disease, and of the operative procedure by which it is remedied. It is astonishing what an amount of constitutional disturbance the presence of even a small portion of necrosed bone may occasion; and though Nature is often sufficient of herself to throw off these extraneous parts, it sometimes happens, from the great depth from the surface, entanglement among muscles, or other causes, that this work falls to the share of the surgeon. A probe and a probe-pointed bistoury, a pair of dressing forceps are usually the whole of the armamentaria employed; but in case of need—i.e., when the sequestrum is partially enclosed in new bone—Hey's saw, Liston's forceps, and the trephine may all be required, as well as the powerful extracting instruments used by Mr. Fergusson, of London, and named the Lion forceps.

HYDROCELE OF THE TUNICA VAGINALIS: HÆMATOCELE: EFFUSION OF SERUM INTO THE CELLULAR TISSUE OF THE SCROTUM AND PENIS.

By A. G. WALTER, Surgeon, Pittsburgh, Pennsylvania, U.S.

ROBERT THOMPSON, 55 years of age, of Pittsburgh, a shoemaker by trade, of good constitution, temperate habits, and robust health, had had hydrocele of the tunica vaginalis of the left testis for fifteen years, which had gradually increased to a very large size, without giving him any annoyance but what its bulk occasioned. No cause for its appearance could be ascertained. In December last, whilst at work, preparing with the hammer a piece of sole leather upon a stone resting upon his knee, the stone slipped and struck the left side of the scrotum with violence, producing excessive pain and faintness. The shock, however, soon passed off, but not the pain; and increased swelling of the scrotum soon manifested itself. By evening both were aggravated; and during the night, more than twelve hours after the receipt of the injury, I was summoned to see the patient. I found him suffering excessive pain in the scrotum, spermatic cord, and lower part of the abdomen; his pulse was feeble and quiet; the hands and feet were cold; he had chilliness of the surface of his body, and nausea. The penis, whole scrotum, the region of the spermatic cord, and of the inguinal canal of the left side, were greatly swollen; the scrotum was hot, and of a brownish erysipelatous-like hue. The skin of the whole scrotum anteriorly, but more of the right side, and of the penis, was hard and indurated, the posterior wall of the scrotum being soft. The left inguinal region was greatly swollen and very painful, but the skin covering it was neither infiltrated nor discoloured.

Knowing that the patient had had hydrocele, and learning that he had been free from hernia, but had received a blow upon the scrotum while in a sitting posture, it was natural to suppose that rupture of the tunica vaginalis had taken place, and that the serum contained in its cavity had consequently been infiltrated in the cellular tissue beneath the skin of the scrotum, inguinal canal, and the penis. This would account for the swelling of those parts, but not for the discoloration of the skin of the anterior part of the scrotum, nor for the increased size of the scrotum, which was twice as large as it had been before the accident occurred. There appeared to be no other plausible supposition but that of extravasation of blood from rupture of some blood-vessel, in the cellular tissue along with the serum, in the tunica vaginalis testis, and in the inguinal canal; which was verified during the operation.

No doubt could be entertained about the proper treatment of the case. The skin of the scrotum had to be relieved of the excessive tension produced by the accumulated serum and blood, else sloughing would have followed. The tunica vaginalis of the scrotum and spermatic cord had to be opened; the extravasated and coagulated blood had to be turned out, else excessive suppuration would have ensued; and lastly, the bleeding vessel had to be secured, else extravasation of blood to an alarming extent might have taken place, with gangrene of the contents of the scrotum supervening, and thus jeopardising the life of the patient. The operation for hydrocele by incision of the scrotum was resorted to, while the patient was under the influence of chloroform. A free and long incision was made from below the groin to the bottom of the scrotum, over its anterior face, through skin and cellular tissue, which was found infiltrated with serum and coagulated blood. The tunica vaginalis, much thickened, was next divided to the same extent. On opening it, more than half a pint of straw-coloured serum was discharged; but its cavity did not collapse, owing to a large quantity of coagulated blood filling it, as well as that of the tunica vaginalis, funiculi spermatici, and of the inguinal canal. After the coagulated blood had been turned out, fresh and profuse arterial bleeding took place, proceeding from the mouth of a ruptured artery of the tunica vaginalis, which was found rent near the raphe, admitting the finger freely into the cellular tissue of the scrotum. Through this rent the blood had found its way into the cellular tissue of the whole scrotum and penis, causing the brawny appearance which those parts presented. The renewal of bleeding was caused by the removal of the coagulated blood, which had acted temporarily as a tampon upon the bleeding vessel. The spermatic vessels were found healthy and uninjured. Lint being placed upon the bleeding vessel, and into the wound, and a strip of adhesive plaster encircling the scrotum, arrested the bleeding. An

opiate given to the patient after the operation produced comfortable sleep.

The case went on favourably, without further bleeding, with no undue reaction, with moderate suppuration in regular time, and speedy disappearance of the swelling of the penis, groin, and scrotum. The wound was closed in six weeks, and the patient was enabled to resume his work.

REMARKS. This case is of particular interest, not only on account of its complicated nature and the alarming and painful symptoms which it offered, but also on account of the speedy success which a simple operation, by freely dividing the skin of the scrotum and the tunica vaginalis, afforded.

Clinical Lecture

ON THE

EMPLOYMENT OF THE OPHTHALMOSCOPE IN THE INVESTIGATION OF MORBID CHANGES AFFECTING THE DEEP-SEATED STRUCTURES OF THE EYEBALL.

By HOLMES COOTE, Esq., F.R.C.S., Assistant-Surgeon to St. Bartholomew's Hospital; Surgeon to the British Hospitals at Smyrna and Renkioi during the war in the Crimea, etc.

EFFUSIONS OF BLOOD INTO THE GLOBE.

THERE can be no occasion, after the repeated examinations with the ophthalmoscope of patients whose organs of vision have been affected with obscure disease, for me to dwell upon the importance of a discovery, which enables the surgeon to detect with his own eye the commencement, and to watch the progress of morbid changes in the choroid membrane, the retina, or any of the transparent structures behind the iris, formerly beyond the reach of observation. Those who witness in Hospital practice only the severer forms of ophthalmic affections can scarcely estimate the full value of any means by which the exact seat may be determined of that class of anomalous complaints, at one time comprised under the head of amblyopia, amaurosis, or disturbed vision.

I trust to live to see the time when these vulgar Greek compounds will be banished from use. When general ignorance submitted to the rule of a scholastic despotism scarcely less ignorant, the public were contented to receive as explanatory of diseases barbaric compounds expressive only of leading symptoms, or of physical changes obvious to the meanest capacity; *e. g.*, amblyopia—dullness of vision; amaurosis—the black dilated pupil; glaucoma—the dull green appearance often seen in a diseased eye. What information do these terms convey? Absolutely none; and the time has now arrived when the profession positively feels a dislike to the use of expressions, which seem to have been begotten illegitimately, or, at all events, under suspicious circumstances. Let us drop them; we have English words as good and far less presuming. Let us speak of dullness of sight, of complete blindness dependent on internal disease; and, ceasing to rest upon the supports of a former age, let us break into the yet unexplored field of special ophthalmic pathology.

Upon the present occasion, I wish to say a few words upon amaurosis dependent on extravasations of blood into the deep-seated structures of the eye; an occurrence which I believe to be far more frequent than has heretofore been believed. The subject may be divided into two heads. 1. The morbid changes produced by such effusions in the tissues wherein they occur. 2. The condition of the bloodvessels preceding such an accident. The treatment must, of necessity, depend upon the scientific solution of such an inquiry.

On May 25th, a pallid boy, aged 9, was brought to the hospital by his father, who wished me to examine the left eye, which had become blind, without any external morbid appearance. There was no fullness of the subconjunctival vessels; the cornea was clear, the iris bright and movable in conjunction with the iris of the opposite eye; there had been no pain in the head, no sickness, nor accident; the child had become blind of one eye, though when and how were alike unknown to the parent, who believed the disease to have been of long standing. He said he had been away on business for some time, during which he could not answer for the amount of care bestowed upon his son. Putting the light in the proper position behind and to the side of the affected organ, which was kept in the shade, I directed the rays reflected by the ophthalmoscope into the natural and undilated pupil, when I became immediately

cognisant of a multitude of dark black spots dispersed over the surface of the retina. They were of various shapes—round, triangular, oblong, etc.—and were especially numerous about the entrance of the optic nerve, the papilla of which was flatter than natural, and obscured. Of the branches of the arteria et vena centrales retinæ I may say, that they did not proceed to their usual subdivisions with normal clearness of outline. Very similar appearances are depicted in Ruete's last work (*Krankheiten des Menschlichen Auges*, tabula iv. fig. 6). Now in this case, three points present themselves for inquiry and investigation. First, What was the nature of these opaque black spots? secondly, How came they to be deposited? and thirdly, What was the prognosis and treatment?

Both pathological and ophthalmoscopic investigation have shown that, in the majority of instances, these black bodies proceed from extravasated blood. The probability of such an occurrence has been anatomically proved by Von Ammon (*Klin. Darstellungen*, i. tab. xv. figs. 20, 21; tab. xvi. figs. 8, 18; tab. xix. fig. 7), who has depicted instances of extravasations of blood in the retina; and many years ago I had an opportunity of making the *post mortem* examination of a patient under Mr. Lawrence, who died, while suffering from amaurosis, of acute bronchitis, and in whom there were found extravasations of blood in both eyes in the internal tunics, close to the optic nerves, which were in other respects normal. In recent cases, the ophthalmoscope reveals the existence of the clot of effused blood in its abnormal relations, where it is easily recognised by its red colour; the subsequent changes may then be traced, namely, the disintegration of some of the blood corpuscles; the partial absorption of the fibrine; but the removal of the extravasated fluid goes on very slowly in the posterior part of the globe, especially in a diseased eye, and some of the particles, indeed, become persistent. The only natural structure which might be supposed capable of producing these morbid black deposits is the pigmentum nigrum; but then we must remember that it is composed of polygonal cells containing granular particles, the sudden escape of which would hardly produce those black flakes, like soot, into which effused blood may become converted. It is, however, doubtless quite possible that blood or pigment may be found floating in the softened and fluid vitreous humour of a diseased eye; I do not believe that the appearances are similar, at all events, in the cases now under consideration, the history leaves no doubt as to the diagnosis.

I examined, on May 30, the eyes of a patient under the care of Mr. Lawrence, at his request, with the ophthalmoscope, in order to make out the exact seat of morbid changes which had produced amaurosis, or blindness, complete in the right eye and considerably advanced in the left. The pupil of the former was dilated, and of dull greenish hue; that of the latter was clear and black. The patient had no pain at the present time. The history was as follows: he was a soldier, stationed at Aldershot, on the occasion of a fire last December year, which consumed a considerable number of wooden sheds and huts. In the discharge of his duty, and in endeavouring to extinguish the flames, he became much heated, and upon returning to his quarters, he was suddenly chilled, the night being extremely cold. In a moment he became nearly blind, and continued in this state until the following morning, when the sight partially returned. During the course of the day, however, the dimness of vision increased, and he saw objects as through a red cloud. In consequence he had to obtain his discharge from the army, and has since consulted many surgeons without deriving much relief.

The eyes were examined by me, May 30, by the ophthalmoscope. In the right eye, the vitreous humour was so turbid that the vessels of the retina and choroid could scarce be seen. The iris was healthy and movable, and the pupil was readily dilated by atropine. A multitude of opaque black flakes floated about the vitreous humour, which was evidently much more fluid than natural. A slight oscillatory movement of the globe caused a shower of these dark black flakes to float from one part to another of the eye. In the left eye, the humours, or transparent media, were clear, and the whole of the posterior part of the eye was visible. I could not make out satisfactorily the optic nerve papilla, although its position was indicated by an opaque white patch: the blood-vessels, namely, the branches of the arteria centralis retinæ and vein, could be traced, in no great number, to their second division; the normally continuous red surface of the choroid was covered with a multitude of white patches, and throughout, both in the red and white colours, were spots of black hue, which were diagnosed as the remains of the colouring matter of effused blood.