are similar cases mentioned by the late Dr. Campbell in his *Introduction to the Study of Midwifery*. There is some influence, I should imagine, to be attributed to retardation of the heart's action in the hæmostasis effected by digitalis. This consideration, and the clearly established fact that this agent does really excite uterine contractions, appears to me to mark it out as a valuable means of controlling the hæmorrhage which occurs in cases of fibrous tumour of the uterus. This application is not strictly obstetric; but is so nearly so, that it appears fairly worthy suggestion here.

[To be continued.]

CASE OF BULLET IMPACTED IN THE CHEST FOR FORTY-TWO YEARS.

By ROBERT HOWARTH LEACH, Esq., Shaw, near Oldham.

ON November 18th, I forwarded to Edward Stanley, Esq., F.R.S., for presentation to the Royal College of Surgeons, a preparation which I have had made of a part of the lung, cyst, and ball, which I recently removed from the body of the late Henry Barrott, of Fullwood, near Oldham.

The following is a short history of the case, and may be most implicitly relied on.

Henry Barrott was aged about 27 years at the time of receiving his wounds. His statement is as follows:—"I was in the First Regiment of Life Guards. We were fighting in close column, on the afternoon of June 18th, 1815, at Waterloo, when I received my wounds. The ball passed through the muscles of my left upper arm, and entered the left side of my chest, fracturing two of my ribs. It could not be extracted. I was in the hospital at Brussels from the above date to March 1816, when I was discharged, with a pension of ninepence a day. I had an incision made into my side, while I was in the hospital at Brussels, to evacuate a large quantity of matter that had collected in my chest."

For a number of years after Barrott returned home, he suffered much, as he stated to me, from attacks of pneumonia; and after I began to attend him, he was subject to inflammatory attacks in the chest, with copious expectoration, which, latterly, was of a muco-purulent character. He sank exhausted on October 13th, 1857, forty-two years and one hundred and seventeen days after he received his wounds. I examined the body, and removed a portion of the left lung, with the cyst and ball, forty-two hours after death. The ball weighs 5 drachms and 34 grains, or nearly three-quarters of an ounce (apothecaries' weight).

Mr. Lund, lecturer on anatomy at the Royal School of Medicine, Manchester, having seen the parts before they were put up, wished to be informed whether Barrott had coughed up blood, or been bled, while in the hospital at Brussels. On my putting these questions to the widow, she informed me, in reply to them, that she had heard her husband often say—"that he did cough up blood from his chest, and that he was bled in the arm twice in one day."

I find, on examining Barrott's papers, that he was discharged on March 6th, 1816; and the cause assigned is a "wounded thorax and abscess in the lung". His papers give him "nine years and a half servitude".

EXAMINATION OF THE BODY forty-two hours after death. The circular cicatrices caused by the ball in the left upper arm and left side of the chest were still very visible. On raising the sternum, we found the left lung diminished in size, very much solidified, and firmly bound down to the ribs by strong adhesions, which resisted the knife like so much cartilage. On separating the adhesions, we opened a large abscess in the lung, which contained about a pint of foetid pus; and in detaching the lung from its posterior wall, we accidentally opened the cyst which contained the ball, and the latter escaped for the moment into the cavity of the chest. This circumstance I very much regret, but the occurrence was unavoidable, owing to the abscess having been opened in our endeavours to separate the lung from the ribs.

REMARKS. I have, as shortly as possible, given the history of the case, and will now venture to offer an opinion upon it. My own impression is, that the ball, having entered the chest and being nearly spent, instead of passing at once into the substance of the lung, glided down posteriorly between the lung and ribs, and, slightly wounding the lung, became fixed in its situation by adhesive inflammation being set up in the pleura pulmonalis and pleura costalis. That the lung was

wounded, the hæmoptysis proves; and that violent inflammation followed, the bleedings spoken of by the widow, go far to prove.

The preparation is in the Museum of the Royal College of Surgeons, where it may be seen on application to Mr. Quekett.

THE VACCINE SCARIFICATOR AND GUARD.

By WALTER GARSTANG, Esq., Blackburn.

AN unusually successful method of operating in vaccination consists in employing a little instrument, which I have designated as above, and constructed in the following way:—Having procured a common metallic pen-holder, with reversible end, and clipped off that portion of it which was intended for the insertion of the pen, and accordingly rendered duplex by compression, I had then left two small tubes, one of which, the larger, admitted of the other sliding into it. I next took the pointed extremities of six well-tempered medium-sized sewing needles, secured them together by ligature, and separated their points evenly placed in relation, by a turn of the thread passed between each; these I placed inside the in-going or lesser tube, just so low down as to allow their points to project outwards to one-tenth of an inch (see fig.), retaining them in position by means of softened gutta percha. So prepared, the lesser tube, elongated for facility of employment by its adaptability to the other, constitutes the vaccine scarificator, of which a full drawing is given (fig. 1).

The guard is an oblong disc of ivory (fig. 2), fashioned like

Fig. 1.

Fig. 2.

a pleximeter, and having in the median line two holes, half an inch apart, of such a size as will allow the scarificator to be moved in a limited degree to and fro in every direction within their area.

In proceeding with the operation, the vaccinator first places the guard in contact with the infant's skin; and, for an obvious reason, he is led to prefer a spot which is anterior to the insertion of the deltoid muscle. He then takes up the scarificator between his finger and thumb, and abrades, in the manner before mentioned, the cuticle and basement-membrane only, corresponding in extent to the size of a pock of variola discreta in its vesicular stage. By this procedure, an areola of derma is exposed, full of active lymphatic absorbents, and peculiarly susceptible of the influence of the vaccine virus, which is thereupon to be immediately applied, either with a lancet or clean ivory point, first clearing away any serous exudation by the touch of a napkin. If, however, the lymph be employed in the dry state on points (and it is by no means infrequently so employed), the serum serves the useful purpose of liquifying or dissolving it, and so promoting its absorption.

Any lymph, short of what may actually have become inert through long keeping, will by this method generally be found to be successful in its result—a circumstance of some importance, in the history of vaccination, to gentlemen in small practice or in remote parts; and the union surgeon, whose cases in this department are oftentimes numerous, will find his

time also not a little economised; the little patient itself, too, on all occasions so full of timidity, will evince but trifling sensation of pain, on account of the dexterity of which the operation admits in its performance.

Periscope.

OPHTHALMOLOGY.

TREATMENT OF OBSTRUCTION OF THE LACRYMAL CANAL BY OPENING THE PUNCTUM LACRYMALE.

In the *Ophthalmic Hospital Reports*, Mr. W. BOWMAN has published a paper on the Treatment of Lacrymal Obstructions. Finding the old plans unsatisfactory, he has been led to lay open the punctum lacrymale. The following is his description of the operation:—

The patient sits in a chair and leans the head against the chest of the surgeon, who stands behind and bends over. For dividing, *e.g.*, the left lower punctum, the ring finger of the left hand is placed on the skin over the lower edge of the orbit, and fixes it there, while tightening or relaxing the lower canal by a sliding movement of the skin upon the bone—the punctum being at the same time everted. The right hand now inserts the No. 1 probe while the canal is relaxed, and then places the probe between the index finger and thumb of the left hand, which holds it in the canal, and further everts the punctum by turning the probe downwards on the cheek, while the ring finger stretches and fixes the canal by a sliding movement of the skin outwards, toward the malar bone. A fine, sharp-pointed knife, held in the right hand, now slits up the canal on the everted conjunctival aspect, from the punctum, as far as the caruncle, and the probe is raised on its point out of the canal, to make sure that the edge of the punctum has not escaped division. Care should be taken not to slope this little incision obliquely through the tissues it severs, as there is then a broader surface exposed, and greater chance of union by the first intention. To avoid this, it is in all cases desirable to pass a probe across the line of incision on each of the few ensuing days, to break through adhesions if they form, and to secure patency. If the punctum is slit up when already inflamed and discharging pus, there is much less disposition to this primary union than when it is done for simple epiphora.

Having slit up one or both puncta, as may seem desirable, the canals are at once probed to ascertain whether they are of full size. Where the fluids of the sac regurgitate towards the eye there is usually no contraction that may not be at once overcome by a full-sized probe (No. 6); but it is well to have noted beforehand whether regurgitation occurs from *both* puncta, and in the first instance to be content, in ordinary cases, with slitting up the lower punctum, inasmuch as this usually suffices for the cure, and it is through this that the passages can be most conveniently probed in their whole extent, down to the nose.

In examining the canal for stricture, some experience and tact are requisite to avoid errors, just as in the examination of urethral strictures. The instrument should be handled very delicately, and the canal held by the surgeon in the same way as when the puncta have to be slit; and he should, of course, have in his mind's eye at the moment the anatomy of the parts with which he is dealing; no force should be used. If No. 6 will not pass, No. 4 or No. 2 may be tried; and, if these fail, it is better to postpone further proceedings till a few days have elapsed, and the slit in the canal is permanently established. Speaking loosely of the general result of a great number of cases, Mr. Bowman has not found any stricture in the canals in more than one-fourth, and that the common situation of the stricture has been close to the sac—less frequently about the middle part of the canal. The stricture of the middle parts is commonly in old cases, where there is rigid thickening of the coats; and probing by instruments successively larger suffices to dilate it. The canal should be stretched lengthwise as the probe reaches it, as its passage is thereby facilitated—for it is easy to fold the canal before the point of the probe. The greatest care is to be taken to proceed gently and not too rapidly; as, if a false passage be formed, and the wall of the canal torn, the injured part is liable to become more rigidly occluded.

If the exploratory probe is arrested at the point where the canals coalesce and join the sac, the fact may be known by noticing that the skin near the tendo oculi is moved when the probe is moved, and an elastic resistance is experienced; whereas, if the probe has entered the sac, it hits against the inner bony wall, and the skin is motionless. Where the sac is not distended, attention to this point is particularly necessary, and it is also requisite that the canal should be held on the stretch by the finger on the cheek, otherwise the outer wall of the sac may be pressed against the inner and give a wrong indication, for the opposite walls are very near each other. Care must also be taken, when an obstacle is encountered, to turn the point of the probe in different directions, urging it gently forwards in each, for otherwise it may merely be caught in a fold of membrane at the orifice to the sac. If there is decided obstruction still, the probe may be forced here; and if it does not then at once pass into the sac (and particularly if, the sac being distended, there is no regurgitation by the canal), Mr. Bowman has recourse to the *cannula lancet*, described in the *Annales d'Oculistique* of 1855-6; and, after piercing the obstruction, immediately pass the largest sized probe (No. 6).

Such strictures of the canals, when once they admit a No. 6 probe, are treated by its repeated use at suitable intervals, in conjunction with the treatment of the passages below, and therefore they need not be further separately dwelt upon.

In the subsequent steps of the treatment, Mr. Bowman prefers to explore the nasal duct by pushing down the No. 6 probe into the nostril. When the sac discharges pus or mucus, this always has to be done again and again, in order thoroughly to open the duct; and even where the sac is not inflamed, it is satisfactory to have passed the probe once.

The passage of a probe or style in the old method, through an orifice in the skin, is not always an easy task. There is frequently a firm closure of the nasal duct, requiring the use of considerable force to overcome it; and a surgeon without experience is apt to be timid or to make pressure in a false direction. In fact, with the old style or probe, which was always straight, it was often impossible to find the lower orifice of the sac; and the rude force exerted was apt to make the end of the style scrape the surface of the bone, and detach the membrane from it. When the probe is introduced in my method from the canal, it enters the sac *behind* the tendo oculi, and is in a better position for *finding*, as it were, the orifice of the nasal duct. But to make this proceeding as easy as possible, Mr. Bowman has the larger probes (Nos. 5 and 6, which are the only ones used for this purpose) *slightly* curved at each end in two different directions within the terminal inch or inch and a half, while the central part (or that held by the finger and thumb) is straight, and they are cylindrical in their whole length. The effect of this is, that when the probe is inserted into the sac, and brought into a vertical position, a slight rotation of it on its long axis makes the lower point, which is in search of the orifice of the duct, describe a small circle; and by slightly varying the inclination of the probe, and making gentle pressure at the same time, with slight rotation, the point never fails to enter the duct. The right and left probes have opposite curves, to suit the inclination of the duct.

The probe is known to have entered the nostril by the depth to which it has entered compared with the external position of the nostril, and also by its coming in contact with the floor of the nose. It is allowed to remain there for a few minutes, or is immediately withdrawn according to circumstances.

To repeat the probing is a very simple process, the enlarged punctum being always ready to admit it, and the proceeding being usually more easy each time it is practised. Mr. Bowman repeats the probing every day, every other day, every three or four days, or every week, according to the progress of the cure and accidental circumstances. It usually becomes at once easy for the patient to press mucus or pus from the sac, as it is secreted, both by the canaliculus and nasal duct; he is enjoined to do this very frequently, and hot fomentations are used if required. It is common to find, in a few days, that no more pus is formed, and in a few weeks that mucus ceases to accumulate. In many cases the relief to the epiphora is immediate, and the patients are made at once much more comfortable, losing all that distress that has been occasioned by the distension of the cavity of the sac, and the congestion of its lining membrane.

Rather more than a year ago Mr. Bowman contrived a mode of inserting a style by the canaliculus, and leaving it for a certain time in the passages, in order to open them on the principle of the old style. The style was made to taper rather