

control of the hæmorrhage; and Mr. Marsh found ligature of the subclavian most satisfactory, for it appears that the quantity of blood did not amount to much more than six ounces.² The other methods which are at the disposal of the surgeon for the arrest of hæmorrhage during this amputation are briefly: (1) Pressure on the subclavian; (2) compression of the inferior or anterior flap; (3) ligaturing or twisting of the vessels on the inner aspect of the limb before they are cut; (4) securing the vessels lower down in the Furneaux-Jordan method; (5) the use of an indiarubber band; on account of the liability of this to slip it has been suggested by Kock that a section of the outer third of the clavicle should be made, and after a preliminary bandaging of the arm the tube should be passed round the shoulder and through the gap in the clavicle, loops of bandage being used to hold it in position.

W. H.—, aged forty-nine, a labourer, was admitted into St. Bartholomew's Hospital with a tumour of the right upper arm. He stated that ten years previously he noticed the formation of a hard swelling which felt like bone on the front aspect of his arm close to the shoulder-joint. Having in the course of two or three years reached about the size of an orange, the tumour remained stationary for six or seven years. Two years and a half ago the swelling appeared lower down. This increased rapidly, and soon the whole upper arm was enlarged. A year ago the limb measured twenty-five inches in circumference. He had lately lost power and sensation in the forearm, which was now flabby and much wasted. He had lost flesh and strength in the last month, and during this time the swelling had rapidly enlarged. (See engraving.)



The patient presented an extraordinary appearance. It is scarcely an exaggeration to say that his arm looked at first sight almost as big round as his thorax, with which, owing to its bulk, it stood off almost at a right angle. Its circumference at its largest part was thirty-one inches. The forearm by comparison looked small and withered. The tumour was roughly barrel-shaped, irregularly nodulated and bossed, some of the low-crowned nodules being of the size of an orange. The original mass (now as large as a cocoon) was as hard as bone, while the remainder, which had developed chiefly in the last three years, was for the most part firm or more or less elastic, like a fleshy sub-periosteal sarcoma. The skin over the tumour was tense and shining, pale and waxy, from distension over the upper part, but congested and almost livid lower down. A network of large tortuous veins ramified over the surface, and many of them towards the front of the axilla were as big as adult fingers. No secondary growths could be detected. The tumour was evidently a sub-periosteal sarcoma. The

patient's condition was distressing. The tumour had reached such a size and weight that he found it difficult to balance himself as he walked; he was obliged to support the swelling so far as he could with his other hand; he could lie only on his back, suffered considerable pain, looked pale and worn, and was rapidly losing flesh and strength.

On examination it seemed quite possible to remove the arm at the shoulder-joint without any very grave risk to life, for the tumour was engrafted upon the trunk by a somewhat narrow neck, so that the wound left after the amputation would be comparatively small. A few days later the operation was performed. The chief danger, of course, to be guarded against was that of hæmorrhage, not only from the arteries supplying the tumour, but from the enormous veins which were seen running over its surface. To meet this the subclavian artery was first tied in the third part of its course, and the arm was then elevated so as to empty it of its venous blood. The artery lay at a considerable depth from the surface, for the clavicle was forced upwards out of its normal position; but as all the tissues around the vessel were natural it was reached without any great difficulty. When the arm was raised the veins—as no blood was now entering—quickly emptied themselves, and thus the limb was rendered, comparatively speaking, anæmic. A large skin flap was then dissected up from the upper and outer part of the tumour, the joint was opened and the second flap formed by cutting from within outwards. As the afferent vessel had been already tied and the venous blood emptied back into the trunk, the amount of hæmorrhage was quite insignificant and was estimated at the time not to have exceeded six ounces. No case could show more conclusively the value, in amputation at the shoulder-joint for the removal of large tumours, of the preliminary ligation of the main artery of supply and the draining of the veins. The artery in this instance was so deeply placed that—even if the skin and deep fascia had been divided, as originally suggested by Syme—it could not have been securely compressed, for, in the manipulation of the limb which was necessary during the amputation, the thumb or finger would inevitably have been lifted off the artery and fatal hæmorrhage would have occurred. Besides, it is only when the entrance of blood by the main artery has been entirely prevented that the veins can be efficiently emptied. It was suggested by some who saw the case that the subclavian vein, as well as the artery, should be tied. But there were two considerations, which taken together seemed to be conclusive against this course. In the first place, ligation of the subclavian vein must always be a more difficult proceeding than ligation of the artery, and the vessel in this case, owing to displacement of the clavicle, was lying at such a depth that I doubt if it could have been safely reached without removing part of the clavicle. Secondly, to have tied the vein would have prevented the return of venous blood into the trunk; so that instead of saving loss of blood, it would have largely increased it. In the course of the operation it was found that the skin on the axillary side had become so thin over the tumour that it seemed unsafe to leave it. The flaps were therefore too short to entirely close the wound, but the edges were brought together as far as possible, and the surface left open for subsequent granulation was only about three inches square.

The patient bore the operation well, and his subsequent progress was quite favourable. The wound healed aseptically, and the temperature was never above normal. He was up on the tenth day. When seen recently, he looked well and had regained flesh and colour.

BRISTOL GENERAL HOSPITAL.

A CASE OF DISLOCATED CALCAREOUS LENS CAUSING SYMPATHETIC IRRITATION; EXCISION.

(Under the care of Mr. CYRIL H. WALKER.)

T. F.—, aged fifty-five years, came to the Bristol General Hospital on Aug. 21st, 1891, complaining of pain in his left eye and failing sight of his right. In 1857 he appears to have received an injury from a gunshot accident. A single shot struck the lower part of the left eye; the sight was immediately destroyed, and there was some bleeding from the wound. The eye was examined by a medical man, but the shot could not be found. The patient was kept in a darkened room for a few days. The eye rapidly quieted down, and gave

² Jacobson: The Operations of Surgery, p. 112, 2nd edition.

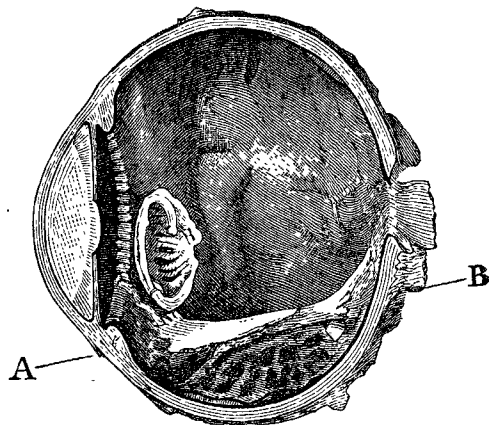
very little pain. In three weeks from the time of the accident the injured eye, though totally blind, was painless and hardly at all disfigured. The eye continued in this condition for nearly thirty-four years, and no information could be gained from him as to whether any opacity had appeared in the pupil indicating changes in the lens. But in April, 1891, four months before admission, the blind eye began to be uncomfortable at times. He stated that soon after this (about the end of June) he was quite sure he felt "the shot rolling about" in his eye. After this the eye gradually became more painful and he repeatedly felt the sensation as of some foreign body rolling about in his eye. On Aug. 13th he noticed that the sight in the right eye, which had hitherto been quite perfect, began to be affected, whilst the left eye became acutely painful.

On admission the left eye was quite blind and extremely painful, the pain extending all round the orbit; the tension was slightly increased. He was constantly mopping the eye with his handkerchief, and in doing so had caused an abrasion of the lower part of his cornea. The rest of the cornea presented a ground-glass appearance, rendering the iris only dimly visible. There was a moderate amount of conjunctival and ciliary injection, and at the lower and inner side, at the posterior part of the ciliary region, there was a small dusky patch, being the scar caused by the wound. So far as could be judged through the hazy cornea, the anterior chamber was deeper than normal; the pupil was moderately contracted and did not respond to light. There was no opacity visible in the pupil. He was still quite confident that he could feel a foreign body rolling about whenever he moved his eye. Atropine and cocaine were applied several times but produced no dilatation of the pupil and no trace of foreign body or lens was visible. The right eye was weak and watery and there was marked photophobia. Distant vision was $\frac{2}{3}$, but he was unable to look at ordinary print for more than a few seconds at a time. Media clear; no ophthalmoscopic changes. The tension was normal, but the globe was decidedly tender. There was hippus of the iris, and he complained of seeing "floating specks." In short, the right eye was in a condition of sympathetic irritation.

Thinking that it was almost certain that there was a foreign body in the left eye, and as it was totally blind and very painful, he was strongly advised to have it removed. This he refused to submit to, so palliative treatment was adopted. After ten days the condition of his eyes remained practically the same, and he willingly consented to have the eye excised. A fortnight later V.R. = $\frac{6}{6}$ and J. 1. The eye was perfectly comfortable, and has remained so up to the present time. The globe measured twenty-two millimetres in transverse diameter. On making a vertical section through the frozen eye the lens was found to be dislocated and remarkably calcareous, being reduced to a skeleton or framework, from the interstices of which all the soft lens matter had been absorbed. It was of nearly normal size and consisted of a fairly uniform outer shell of hard material like egg-shell, with a few radiating clefts and grooves near the periphery, while the interior of the lens was converted into loosely adherent particles or flakes, forming a sort of cancellous structure. (As the globe was not quite frozen through the central part of the lens crumbled away to a great extent and was lost in the fluid vitreous. Hence in the mounted specimen from which the accompanying drawing is made only the concave outer shell is represented.) Examined under the microscope, some of these flakes when decalcified looked rather like bone, but no true bony structure existed. Sections of the decalcified cortex showed lens fibres quite distinctly in many places. No trace of lens capsule or of suspensory ligament was visible. The shot went completely through the eye, entering in the ciliary region (A) and going out a little below the optic nerve. It could not be felt at the time of enucleation, and is probably lodged deep in the tissues of the orbit. From the course taken by the shot it seems likely that it also wounded the optic nerve further back in the orbit, which would account for the total and permanent blindness of the injured eye. The point of its exit from the globe is marked externally by a raised lump (B) close to the optic nerve, consisting of strands of fibres running backwards from the sclerotic. In the track of the shot is a firm, white, glistening band of fibrous tissue, looking much like a piece of tendon, stretching from A to B, and raised about an eighth of an inch from the sclerotic. The retina is detached, and rises up to meet this band on each side, and so forms two shallow pouches or depressions. The small space between the retina and choroid seemed to be full of clear fluid. The detached

portion of the retina is much pigmented, so as to present a dark speckled appearance.

There are several points in this case which make it of interest, and the occurrence of distinctive changes in a damaged eye so many years after the infliction of the injury is very unusual. Mr. Walker remarks that although partial calcification of old cataracts is not very uncommon, yet text-books say very little on the subject, and it is hard to find any records of such extensive changes as this case presents. The fact that it also caused sympathetic irritation adds further interest. A rather similar case is related in the *Medical Times and Gazette* of 1853. Dr. Taylor speaks of the con-



Left Eye. Vertical section, $\times 2$. A, Entrance of shot. B, Exit. Half of the dislocated lens is shown in the position it occupies now the specimen is mounted in glycerine jelly.

dition as being of very rare occurrence. In that case the globe was shrunken, but in spite of this the cataract was extracted, though with great difficulty, and the eye did well. If the patient's statement that the pupil of the injured eye was quite black, and that "no one would know that the eye had been injured," be correct (and he seemed quite certain about this point), the lens must have been almost completely dislocated, gradually become calcareous and eventually broken from its few remaining attachments. It is not easy to explain why a dislocated lens should become calcareous, for though it has been shown (by Mr. Priestley Smith and also by Dr. W. J. Collins) that the amount of solids in a senile cataract depends on the age of the cataract and not on the age of the patient, yet so advanced a change could hardly be accounted for by this ordinary process even in thirty-four years.

Reviews and Notices of Books.

SOME GERMAN CLINICAL MANUALS.

- Lehrbuch der Auscultation und Percussion.* Von Dr. C. GERHARDT. Fünfte Auflage. Tübingen: H. Lapp. 1890.
- Lehrbuch der Klinischen Untersuchungs-methoden für die Brust und Unterleibs-organe.* Von Dr. PAUL GUTTMANN. Achte Auflage. Berlin: A. Hirschwald. 1892.
- Diagnostik der Inneren Krankheiten auf Grund der heutigen Untersuchungs-methoden.* Von Dr. OSWALD VIERORDT. Dritte Auflage. Leipzig: F. C. W. Vogel. 1892.
- Medicinische-klinische Diagnostik: Lehrbuch der Untersuchungs-methoden innerer Krankheiten.* Von Dr. FELIX WESENER. Berlin: Julius Springer. 1892.
- Grundriss der Klinischen Diagnostik.* Von Dr. G. KLEMPERER. Dritte Auflage. Berlin: A. Hirschwald. 1892.

THE works named above are for the most part well known. Only one of them is of quite recent date—namely, Dr. Wesener's the rest are new editions, which in every case are said to be improved and extended. Truly, of the multiplication of clinical manuals there is no end. We have only to recall the number of works of this class that have been produced in this country during the past decade to find illustration of this. The student is embarrassed in his choice, but fortunately most of these text-books of the art and science of diagnosis are reliable, differing mainly in the extent to which