the relations of an artery, you will ascertain the guides to its exact position in the limb, and the points at which the circulation through it may be controlled by pressure, yet, in all probability, you will fail to recognise at least the first aneurism you see. You will observe the peritoneum, and follow it as it passes from above downwards, and from side to side; you will learn its reflexions, prolongations, and relations, and will be told that this membrane forms the sac of a scrotal hernia, and yet, when you have done all this, you will not be able to diagnose a hernia. You will also, with especial care, dissect out the openings in the abdominal wall through which the spermatic cord naturally descends, and the bowel in inguinal and scrotal hernia unnaturally passes. You will see the dimple of the internal ring and the striking pillars of the external, and yet, you will not, in the whole course of your experience, see these rings in the living body as you found them, after dissection, on the subject; for when you will be called upon to interfere with them, they will be altered in structure, changed in form, and disturbed from their relative positions.

It is true, then, that the changes which occur in disease are so great that the normal gives you only an imperfect idea of the abnormal. To see the structures under their altered conditions, you must follow the examination of the body in another place, viz., the *post mortem* room of the hospital. There, also, anatomy will be taught you; not, however, the anatomy of the sound, but of the unsound, body; not normal but morbid anatomy; and, unless the former is supplemented by the latter, the surgeon cannot fully profit by that science upon which his art is founded. What shall we say, then? If the anatomy of surgery and medicine differ so widely from the anatomy of the schools, shall we be warranted in neglecting the latter, and giving our whole attention to the former? Most certainly not; for, if we are not familiar with the body as we find it in the dissecting-room, it is not possible we could rightly interrogate or interpret it as it appears at the bedside or in the operating theatre. By divorcing anatomy from pathology, we should deprive ourselves of the measure we employ for judging of diseased states, for verifying our opinions and correcting our errors.

By neglecting normal anatomy, we should be returning to the empiricism of a time long passed, when there was no standard measure of science to test the deductions from experience. We should fall back into the errors of the medicine-men who lived before the days of Galen, or even of a much later date, viz., before the middle of the fourteenth century. Until the middle ages at earliest, there was no scientific practice of medicine or surgery, *because there was no systematic study of anatomy*. A body of well ascertained facts had no doubt been handed down to posterity by Hippocrates, the great father of medicine, and those who followed him; and it is marvellous that so much was effected by them, and especially by the genius of Hippocrates himself, without the assistance of anatomy and physiology; but, on the other hand, centuries passed away without a single step being made in advance, until men began to give themselves up to the study of the *normal* anatomy of the human body.

The various methods of studying anatomy are four, viz., reading, attendance at lectures, attendance at the demonstrations in the dissecting-room, and dissecting for yourselves. All ought to be combined; you will derive assistance from each; but the two latter methods are of the most importance, and reading and lectures should be only auxiliary to them. You must read to save time, and to prepare yourselves to profit fully by your work upon the body; and you should attend lectures to hear the organs of the body described in an order arranged according to their nature, *i.e.*, in a descriptive and not in the topographical manner followed in the dissecting-room; but dissecting should be your chief resource. Dissect all you can; it will educate your senses to observe with accuracy, and your fingers to manipulate with skill. By dissecting, you have the advantage of obtaining knowledge for yourselves, independently and at firsthand, instead of receiving it upon the authority or diluted through the medium of another; your "eye negotiates for itself and trusts no agent"; you will interrogate nature to her face, and discover and verify by her aid alone. Dissection is the only perfect way of learning anatomy, which has been even defined as a "doctrine learned by dissections". Every facility will be given you for so studying it, for dissecting no longer requires that moral and physical courage which, in old times of superstition and torture, was necessary in those who prosecuted it.

By these several means, endeavour all you can to become proficient anatomists. It was by their knowledge of anatomy that the great surgeons, as well as the great naturalists, of this and other countries and times, achieved their fame. It was their knowledge of anatomy which placed Paré and Heister, Petit and Le Dran, Wiseman and Pott, Abernethy and John Bell beyond their fellows, and made them great surgeons. It is on account of their anatomical works that you will come to venerate the ancient names—of Galen, whose writings

were the only standard authority in anatomy for upwards of eleven centuries, from 200 A.D. to 1326; of Mundinus, who, a little before this latter year, published a treatise on anatomy, which was the recognised text-book of the universities and of teachers down to the middle of the sixteenth century, and from the date of which medicine may be said to have started on a scientific basis; of Andreas Vesalius, the Copernicus of anatomy, who cleared away the time-venerated errors of Galen, and who, from his love of anatomy, was falsely accused of desecrating the human dead, and, for his observations on comparative anatomy, was attainted of heresy; of those contemporaries of Vesalius—Vido Vidi and Jacob Sylvius—the latter of whom has given his name to an aqueduct which provides for the most marvellous, as it is the most important, hydrostatic agency in the body; of Fallopius, whose name may be said to ring in the ear of every medical student, and points to the high road of our creation; of Eustachius, who discovered the anatomical explanation of what is called throat-deafness, and whose name, with those of Arantius and Valsalva, will for ever dwell in the hearts of men; of Fabricius, the discoverer of the valves in the veins, and the teacher of the renowned Harvey; of Harvey himself, the discoverer of that perpetual miracle, the circulation of the blood; of Havers, whose name permeates throughout the structure of bone; of Glisson and Scarpa; of the immortal Hunters; and of many others, both English and foreign, whose names are retained in the nomenclature of anatomy.

You will likewise hear with admiration of Goodsir and Quain; of Owen and Huxley; Humphry and Struthers; and of that philosophic surgeon, my esteemed master John Hilton, from whose admirable dissections the Anatomical Museum of Guy's has been filled with models of unrivalled excellence, and who, by the application of exact anatomical knowledge to the elucidation of some of the most difficult problems in surgery, has given to the world that classic work on *Rest and Pain*. You will hear, too, of many more who, in modern times, have carved their names for ever into the records of anatomy.

Lastly, it will gratify you to know that many who have taught in this school have distinguished themselves by their anatomical works. There is that pinnacle of light Sir Charles Bell, the first lecturer on anatomy at the Middlesex Hospital, whose discovery of the roots of the spinal nerves did for the anatomy and physiology of the nervous system what Harvey's great discovery did for the circulation. There is our consulting-surgeon Mr. Alexander Shaw, who, as the assistant of his relative Sir C. Bell, and by his independent writings, has made many valuable contributions to anatomy. There is Mr. John Tomes, the first surgeon-dentist to the hospital, who has given to science much on the anatomy of the teeth. There was the beloved De Morgan, whose name (with that of Tomes) is inseparably associated with the minute anatomy of bone. There is Professor Flower, the conservator of the Hunterian Museum, whose writings on anatomy and zoology are as important as they are various. There is Mr. Nunn, who for many years was one of the most popular and successful demonstrators in the metropolis; and whose little treatise on the arteries has been translated into the French language, and is quoted in our English text-books on surgery. There is, too, our present lecturer on surgery, Mr. Hulke, whose researches on the minute anatomy of the eye formed the subject of his very valuable lectures at the College of Surgeons.

Let the work performed by these men stimulate us in our own. Let us strive to follow along their honourable path; and, by the careful and honest study of anatomy, take the first step in the only true way to be great in our profession.

ON THE TREATMENT OF COMPOUND DEPRESSED FRACTURES OF THE SKULL.

BY SAMPSON GAMGEE, F.R.S. EDIN.,

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In a clinical lecture on this subject, which obtained the privilege of publicity through these columns (BRITISH MEDICAL JOURNAL, July 8th, 1876, p. 37), I endeavoured, on the basis of three successful cases, and after a review of leading authorities, to justify my conviction that, "in compound fractures of the skull, without brain-symptoms, the proper course of practice is *not to trephine*".

I now go further. Still holding to the reservation made in the lecture quoted, "that there may be cases of compound fracture of the skull justifying operative interference", I maintain that many cases of compound depressed fracture of the skull, *with brain-symptoms*, do perfectly well without the trephine. Here are two cases in point.

On the 22nd November, Edward Armit was admitted into the Queen's Hospital under my care. He had a transverse wound about

an inch and a half in extent at the back of the head, a little to the left of the middle line, and just below the suture, between the occipital and the left parietal bone. The wound, which had been inflicted with a cabman's metal badge, led directly down to the bone; this was fissured, and the edges of the bony fissure were distinctly felt to have been driven in. The man was perfectly sensible, but the right pupil was dilated, the corresponding eyelid drooped, and partial paralysis of motion in the right arm was well marked. The treatment prescribed was absolute rest in bed, low diet, close attention to the bowels, dry dressing of the wound, and application of ice-bag to the head. At the end of nine days, the wound had healed, and the symptoms of compression, after steady decrease, had completely disappeared. The patient was discharged on the 10th December, and resumed work six weeks after the accident. I saw him last week in perfect health. The depression in the skull is still quite perceptible, but the man has not lost an hour's work, and has shown no symptoms traceable to the injury.

On May 11th, John Curtis, aged 46, was admitted under me in our accident ward. He had been thrown out of a cart in rapid motion on to some stones. The accompanying woodcut, executed from a

photograph taken after complete recovery, will give an idea of the extensive nature of the injury. The greater part of the right half of the scalp was turned back and much periosteum stripped from the frontal and left parietal bones, in each of which was a fracture with depression: one fracture, immediately above the parietal ridge, was characteristically punctured and depressed—a circular piece of bone, about the size of a split pea, having been firmly driven in to the depth of one-eighth of an inch. The man was barely conscious, and could only give a very imperfect account of the accident. When I saw him at 11.10 P.M., about two hours after admission, the pulse was 76; respirations 22; temperature 99.8. After carefully cleansing the wound, its edges were brought into contact with eight points of silver suture; an oakum dressing and gently compressing bandage; a large ice-bag over all.

On the following day (May 12th), 9.30 A.M., pulse 84; respirations 22; temperature 101.2. 9 P.M. Pulse 108; respirations 28; temperature 103. At this visit, I noted numbness and impaired motor power of the left hand, with complaint of headache. Ice-bag to be persistently continued, and an aperient draught prescribed.

May 14th. Dressing changed; discharge considerable; wound looking very well; the lower half of it healing by the first intention. Pulse 80; respirations 20; temperature 101.2. Pain in head and numbness in hand gradually decreasing.

From this date, the progress to recovery was uninterrupted. The man was discharged June 21st, barely six weeks after the accident. He resumed his regular work as a carter in another fortnight, and has

ailed nothing since. When I last saw him (September 28th), he was in vigorous health. The hair hid the greater part of the wound, from which two splinters of bone were extracted about two months ago. The cicatrix throughout is pale and painless, the points where the sutures were inserted being scarcely perceptible.

From these two cases I would not pretend to deduce a rule of practice, though I think the treatment pursued in them deserving imitation under analogous circumstances. The cases tend to restrict the justifiable use of the trephine within still narrower limits than those defined in the lecture above quoted. How narrow those limits should be, how rarely the trephine should be applied to a broken skull, may be the subject of a subsequent communication.

NOTES ON OBSCURE CASES OF CALCULOUS DISEASE OF THE KIDNEY.

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THE immediate object of this communication is to direct attention to the more chronic symptoms of renal calculus, and to show how easily, in many cases, the true nature of the affection may be overlooked. I would speak first of cases in which the principal symptom consists in heavy and continued pain over the sacrum, while there may be no other discomfort of any kind beyond such as we find in connection with dyspepsia in no very aggravated form. The circulation is generally feeble, and the patient complains of languor and want of appetite. We are sometimes assisted in our diagnosis by the bladder becoming irritable; but this symptom is not always present in any marked degree, and other causes than the true one are sought in explanation of the case. These causes are numerous and well known to the profession; but the presence of a renal calculus would scarcely suggest itself in explanation of the symptoms, if no urinary trouble were recognised. The case, in fact, is not made out. There is, however, a test which is very valuable in these obscure cases; viz., the tincture of galls. This may be regarded as an indicator of the presence of the extractive matters of the blood, and, if it be added to urine containing these, we get an immediate light brown flocculent precipitate.* This shows us that we have some cause of irritation affecting the urinary canals, and we are thus directed to the appropriate treatment of our patient. If we have no indication by this test, we may then be sure that the sacral pain is due to other cause than the presence of a renal calculus; but, if we obtain the reaction, the probability is great that a calculus is present. I use the expression "the probability is great" because now and then, and especially in gouty persons, we meet with cases in which a highly acid urine acts as an irritant and causes an effusion of the extractive matters of the blood. In these gouty cases, the irritation is often sufficient to cause an effusion of serum into the renal tubes, and albumen appears for a time, making us anxious as to the probable production of the well known small gouty kidney. In most cases of renal calculus, however, we do not find albumen present unless blood be effused, in which case the character of the disease is at once manifest. It should always be borne in mind that the absence of albumen (should the practitioner happen to examine the urine) does not prove that the urine is free from all constituents of the blood. There is, again, a set of symptoms produced by renal calculus which it is not always easy to attribute to the proper cause. In these cases, the calculus is present in the right kidney, and the patient complains of pain extending over the body from the renal to the hepatic region. The practitioner cannot detect hepatic enlargement, but he notices that the patient is slightly jaundiced. There is dyspepsia, with gout and depression of spirits, the colon being much distended, and the pain over the hepatic region is at times especially severe. If, as often happens, there be no irritability of the bladder, or but little, and no hæmaturia, these cases are not easily diagnosed. Nausea is common, but rarely such vomiting as to lead to the belief that the stomach is sympathetically affected. The use of the tincture of galls will help us greatly in diagnosing these cases.

When a calculus exists in the kidney, we sometimes observe, among other symptoms, that the patient shows a tendency to rigor. This is accompanied with blueness of the nails. The rule is, that the patients do not pass into rigor, but what they experience is often expressed by saying that they feel a "creeping" all over them.

I once saw a remarkable case, however, in which well marked rigor

* I have given a full description of the action of this test, and of its value in practice, in the *Guy's Hospital Reports*. The test is added *guttatim*, when, if the extractives are present, an immediate precipitation occurs.