complaining, but during the autumn months grew gradually weaker; while still so little attempt at repair by formation of new bone was made, that interference seemed impossible. Late in October, however, a slight movement caused a separation of the upper end of the dead portion, and a spontaneous fracture took place just below the trochanter.

So little effort had Nature made, that there was no strength in the periosteum to resist the muscles, and in a few days the limb was shortened between five and six inches; the knee of the injured side being little below the level of the scrotum of the other. Pain and suppuration increased, several new openings formed, and the patient's case seemed almost hopeless. For his condition now was, an inflamed knee-joint, a thigh-bone fractured close to the trochanter, and known to be dead to the epiphysis, with a leg swollen almost to bursting, in a boy with a pulse invariably above 120, with profuse night-sweats, exhausting diarrhoea, and a capricious appetite. There was no evidence that the lower end of the dead portion was loose, indeed it felt firm, and its proximity to the knee-joint was an added risk.

It was obvious something should be done; so on November 21st he was put under chloroform, and, having made a free incision on the outer side of the thigh, I succeeded tolerably easily in dividing enough of the thickened, but barely ossified, periosteum, to enable me to seize and detach the piece of bone now figured. Profuse hæmorrhage occurred, first from a considerable arterial branch, which was easily secured; and secondly from the whole inner surface of the periosteum, requiring plugging of the wound and hollow of the new bone with lint.

From this time, the case was one of uninterrupted recovery. A full opiate gave him a long and refreshing sleep. The stuffing was removed on the fourth day. Gradual extension was kept up on the shortened and extensible thigh, by properly adjusted pillows, aided by the swollen foot and leg, as the counterextending force. Ossification now went on with great rapidity. The fistulous openings gradually closed, though delayed by very numerous small fragments of bone; the progress of which the little patient used to watch with interest as they worked their way from the upper to the lower end of the bone; and he rapidly regained flesh and strength.

Friction and frequent use of passive movements aided in restoring the movements of the knee and ankle, which are now nearly normal.

Present State of the Limb (January 1868).—The patient walks and runs easily and rapidly, with the aid of a high-heeled shoe. When he is stripped, the left leg looks considerably shortened; but careful measurement from pelvis to patella shews that this shortening is rather apparent than real, depending chiefly on a distortion of the spine, the result of his constrained position in bed, which tilted up the affected side of the pelvis, and which is now gradually diminishing. The real shortening of the femur is rather under an inch and a half. The injured limb is growing rapidly, and is well nourished; its circumference being only three-quarters of an inch less than that of the other.

REMARKS.—This case is worthy of notice, on account of the rarity of such severe and complicated cases, the various risks run by the patient, and the cure without amputation. In proof of its rarity and danger, I may briefly quote the following, a few out of a host of similar authorities.

Weidmann, in his well known monograph, *De Necrosi Ossium*, figures only one case at all similar in severity to this one, that of a girl, aged 21, in whom about two inches only of the shaft of the femur became necrosed.

Benjamin G. Bell, in his classic work on the *Diseases of the Bones*, does not seem ever to have seen any case of necrosis of the femur so extensive or so complicated.

Sédillot, in his monograph *Sur l'Evidement des Os*, records a considerable number of severe cases of necrosis of the long bones; but, so far as I can discover, in none was there separation of even a portion of the whole thickness of the femur.

Ollier, in his most masterly treatise on the same subject, refers in strong terms to the extreme rarity and danger of cases in which the necrosis involves the whole thickness of the shaft of the femur; and states his belief that it is almost impossible that such a case could recover in a large hospital, from the risks of osteo-myelitis, etc.

Gross gives his opinion in the following terms. "Cases occur in which the neighbouring structures are so extensively and seriously involved, as to render it difficult, if not impossible, to save the affected limb. Such an event will be particularly liable to happen when a large joint is implicated, as, for instance, that of the knee in necrosis of the thigh." (3rd ed., vol. i, p. 817.)

Among many cases in the records of surgery, I may just refer to two, each of which resembled my case in almost every particular, and both of which recovered, but only after amputation of the affected limb. One is recorded by Dr. Knox of Edinburgh, in the *Edinburgh Medical and Surgical Journal* for 1822; and the other by Dr. Kerr of Aberdeen, in the same journal for July 1834.

A case somewhat similar to mine, with a like fortunate result, is recorded by Dr. Handyside. (*London and Edinburgh Journal*, December 1844.)

We have not far to seek for an explanation of the danger to life and limb, in cases where the whole thickness of the shaft of the femur is involved; for it occupies a special and peculiar position amid the long bones. The tibia and fibula, radius and ulna, being in pairs, have this great advantage, that separation even of the whole epiphysis of one need not in any great measure interfere with the shape, length, and usefulness of the limb, as the unaffected bone acts as the best possible splint during the process of separation and repair. In the humerus, too, necrosis even of the whole shaft is not so dangerous to life, nor does even very considerable shortening impair to any great degree the usefulness of the limb. In the femur, there is risk of deformity and very great danger to life.

THE GLANDULA COCCYGEA OF MAN.

By PROFESSOR DR. VON LUSCHKA, Tübingen.

IN the year 1859, I (*Der Hirnanhang und die Steissdrüse des Menschen*, Virchow's *Archiv f. Patholog. Anatom. und Phys.*, 1860, v. xviii) discovered a small glandular organ, to which I gave the above name, on account of its local relations. It is generally only of the size of a hempseed, and constitutes either a single compact round body, or consists of several loosely connected portions. The organ is situated on the anterior circumference of the end of the coccygeal bone, connected with filaments from the ganglion impar of the sympathetic nerve, and with small branches of the arteria sacralis media, between the levator ani and the posterior end of the sphincter ani externus. The substance of the gland, when fresh, has a pale red colour, and a considerable degree of elasticity, so that the whole, as well as parts of it, easily slip between the plates of glass, and resist considerably the attempt to tear them asunder by needles.

As to the structure of the gland, there are to be distinguished—1. The *stroma*, consisting of a tough fibrous connective tissue, free of elastic elements, interspersed with numerous oval granules; 2. The glandular cavities or follicles ("Hohlgebilde"), the walls of which are formed by connective tissue containing many oblong granules not affected by acetic acid. These cavities are of different forms, sometimes representing long regular canals, occasionally with branches; sometimes round or oval bodies. Their contents are chiefly cells, round or polygonal, always with a distinct nucleus, which is surrounded by a delicate granular membrane. Along the axis, as Sartoli has proved, usually is found a small almost capillary blood-vessel, imbedded in the cell-tissue, but distinctly separated from it. By careless artificial injection, the interglandular blood-vessels are easily torn; the injected fluid mixes with the cellular tissue, and fills the cavities in such a manner as to mislead to the view that they are conglomerates of blood-vessels.

The gland is rich in nerves derived from the terminal branches of the sympathetic nerve. They form microscopic networks perforating the stroma, and are occasionally seen connected with ganglion-cells; the existence of the latter has been lately confirmed by A. Macalister. (On the Anatomy and Physiology of the Coccygeal Gland, *BRITISH MEDICAL JOURNAL*, 1868, No. 367.)

Although the function of this organ is at present unknown, it is already of great interest to pathology, because it is not only the seat of the so-called "coccygodynia", but also of the hygromata cystica perinealia.