been committed with respect to the lower epiphysis of the humerus; and that those authors who have written upon the subject of injuries of the elbow-joint have confounded with each other fractures above the condyles and disjunction of the epiphyses, from ignorance of the anatomical fact that the lower epiphysis of the humerus does not include the condyles, which belong entirely to the shaft of the bone; the epiphysis includes nothing but the trochlea and capitulum. The fundamental mistake of placing fracture through the line of the epiphysis among supracondylar fractures (as has been done by Malgaigne, Vidal de Cassis, Dupuytren, and others) has involved the equally glaring error of distinguishing these two injuries from luxation of both bones backwards by the same diagnostic sign—namely, the loss of the normal relation of the olecranon process to the condyles of the humerus."

Fortunately, gentlemen, it is not often that we are able to demonstrate what has actually taken place in accidents such as these. In the majority of instances, they are simple fractures or dislocations, and the true condition of the parts is hidden beneath unbroken skin; but, now and then, it happens, either because the injury forms part only of some more serious accident, or because it leads to consequences which are, happily, uncommon and necessitate amputation, we are enabled to do so. When we are, the illustration becomes doubly valuable, and I am able to show you one such to-day.

In this preparation, we have one such which implicated the lower extremity of the femur. The patient was a youth aged about 17, who had been caught in some machinery, and had been violently twisted round. A serious injury to the knee was the result, and he was admitted into the infirmary under the care of the late Mr. Samuel Smith. A fracture very low down in the shaft of the femur was diagnosed, and it was found impossible to rectify the displacement which had taken place. The accident had occurred a few days before my election as surgeon to this institution, and the case was amongst the first handed over to my care by Mr. Smith. The preparation has, therefore, an especial value, on that account, in my eyes, and is one to which I have often had occasion to refer.

When I took the case over, I found gangrene setting in in the foot and leg; and, by Mr. Smith's advice, I amputated the limb above the fracture, and here we see exactly what had happened. The lower epiphysis of the femur had been torn from its connection with the shaft, and had remained, with but little displacement, almost *in situ*. The shaft had been driven down into the popliteal space, and had so stretched the vessels, both artery and vein, and the popliteal nerve, that gangrene was inevitable; and it was clear to demonstration that no power would have sufficed to replace the fragments in position.

Once since I have seen an almost identical case in the hands of Mr. Atkinson, and a knowledge of what had taken place in this case of mine enabled us from the first to form a correct diagnosis concerning it. In that case, Mr. Atkinson endeavoured, in the first instance, to excise the displaced epiphysis, but without success; and was compelled, as I had been, to resort to amputation, which, as in my case, also proved successful, so far as the life of the patient was concerned.

Cases such as these cannot fail to make a profound impression on the minds of those who have charge of them; and as, when the first occurred to me, I registered a mental vow that I would never forget how important a part the epiphyses may play in such accidents, so now, after twenty years of further experience, I stand here thankful for the lesson I then learned, and feeling it to be my bounden duty to urge upon you the observance, through life, of a similar course of vigilance and care.

CUCAINE.

By A. PERCY SMITH, F.C.S., F.I.C., Rugby.

If the demand for cucaïne increase to any great extent, it is not unreasonable to suppose that some adulterated specimens may find their way into the market; although, no doubt, since few practitioners will purchase the drug from any but well known houses, the risk of adulteration is small.

Owing to the liberality of Herr Merck, of Darmstadt and London, who placed a small quantity at my disposal, I have been enabled to apply a few tests to this alkaloid, with the object of ascertaining its properties, so that I might be able to detect the presence of adulteration, if such should arise.

Since the quantity I had was but small, I directed my attention chiefly to optical tests, or the study of the crystals deposited from various solvents, viewed under the microscope by the aid of polarised light, as I have found this method very useful, and of great assistance

to chemical tests. There are a few alkaloids, such as strychnine, cantharidine, and salicine, which can at once be identified by this means alone. In other cases, where the crystalline form is not distinctive, it serves as a means for determining its purity, since admixture frequently alters the manner of crystallising (for example, quinine-sulphate pure, and mixed with cinchonine-sulphate), or else prevents it altogether, nothing being left, on evaporation of the solvent, but a gummy mass.

Cucaïne-hydrochlorate is soluble in chloroform, ether, and alcohol. From chloroform it does not crystallise (owing, probably, to rapidity of evaporation); from ether and alcohol it does; but best from the latter medium. The method of procedure is to place a fragment of the alkaloid in a watch-glass, add some alcohol and a few drops of ether, and allow it to evaporate spontaneously in a warm room. In a few hours, feathery rosettes of crystals may be seen on the glass. Strong heat, and consequently rapid evaporation, are fatal to crystallisation.

Crystals of cucaïne-hydrochlorate, crystallised from alcohol, seen by polarised light. Magnified 24 diameters.

If the crystalline film be very thin, it will appear of a bluish-white under polarised light; but usually the crystals are thick enough to produce prismatic colours.

The advantage of using polarised light may not be obvious in this case, since the crystals are visible without its aid. This is not always the case; for instance, strychnine deposited from chloroform may be completely invisible without this illumination.

So far, it must be confessed that there is nothing peculiar about the crystals of hydrochlorate of cucaïne, sufficient to distinguish them from other alkaloids with monoclinic crystals in a radial form; yet, where we are dealing with a known substance, any alteration or modification of a recognised crystalline form would naturally suggest the presence of an impurity; but it yet remains to be seen if adulterated specimens are to be obtained, and what effect such adulteration will have.

One peculiarity about the crystals is that the hydrochlorate and the free base both assume the same form, which is rather unusual.

The other tests which I was able to apply are:

Sulphuric acid No colouration.

„ + Potash-Bichromate „

Nitric acid „

Shosphomolybdic acid Yellowish-white precipitate, soluble in ammonia and in hot nitric acid.

Phosphotungstic acid Gelatinous white precipitate, soluble in ammonia.

THE ACTION OF CUCAINE ON THE NASAL MUCOUS MEMBRANE.

By E. CRESSWELL BABER, M.B.Lond.,

Surgeon to the Brighton and Sussex Throat and Ear Dispensary.

It may be interesting to know that I have been able to confirm Bosworth's important observation ("A New Therapeutic Use of Cucaïne," *New York Medical Record*, November 15th, 1884, abstract in *Centralblatt für Laryngologie*, vol. i, No. 8), in which, however, he appears to have been forestalled by Jellinek (compare Professor B. Fränkel, *Monatsschrift für Ohrenheilkunde*, etc., vol. xix, No. 1, p. 18), to the effect that cucaïne not only acts as a local anæsthetic to the nasal mucous membrane, but also has the power of contracting