hazardous.* To pass a saw into the knee-joint, and then to partially fill that cavity with bone detritus, and the oozing from cancelli, is a procedure whose innocence could only be proved by a goodly array of thoroughly ascertained cases. It must also leave behind a femoral joint-surface greatly altered, and provided with a peculiar shelf and sharp prominence, with which the tibia cannot possibly fit; therefore one would like some after-history concerning the reliability and usefulness of the articulation. However, it is not my wish to criticise either of these very ingenious procedures, further than to show cause for the suggestion of a different operation, which, although performed in two stages, is less severe, and gives very excellent results. The following case sets forth the method I have adopted.

Kate L., aged 14, was admitted under my care into the Charing Cross Hospital on February 5th, 1878, in the hopes that a severe *genu valgum* of the left limb might be rectified. She is a healthy, but

strongly constituted, child. The plate gives a fair idea of the condition of limb. This child was for certain reasons not photographed. Her limb was laid on paper, and its outline carefully traced; also an iron wire was bent and moulded accurately to its outer side. From these tracings and moulds the plate has been drawn. I also procured a paper tracing from the healthy limb of a girl of equal age.

February 14th. I divided with a chisel the femur a little above the epiphysal junction. The tracing of a healthy limb was so laid on the table that its outline corresponded with that of my patient's thigh, against which the wire-mould was held. The femur was bent inward at the section, until the foot lay midway between the place where it was (marked by the iron wire) and the place where it ought to have been (determined by the tracing of a sound limb). In this position the parts were fixed by a plaster of Paris bandage.

February 21st. The small wound had healed. There had been neither pain nor rise of temperature.

March 7th. I divided the fibula very obliquely about an inch below its head, and so deflected the lower part of the limb that the foot occupied the same place as that of a healthy limb, and applied the plaster-of-Paris bandage.

March 15th. There has been neither fever nor pain, and the wounds healed within the week.

Results.—The limb is now of very good form, and is strong; the knee-joint, not having been interfered with, is perfect (fig. 6). I was anxious, when I undertook the above operation, so to arrange that the limb should not merely look straight while the knee was extended, but that during flexion the tibia should move in its normal plane—that is to say, that in every posture of the limb, whether the median, turned out or in, flexion of the knee should always bring the heel in a circular line towards the tuber ischii: any deflexion outward or inward from this course would be a manifest result of error. This consideration caused me to take such pains, by the aid of tracings and mouldings, to divide the rectification of the deformity equally between the parts above and below the knee-joint. The result is perfect. The limb is shapely, not only while extended, but also in flexion; and in every position the heel, when the knee is quite bent, lies close to the tuberosity of the ischium.

There are now under my care two or three cases of exaggerated deformity—at hip, at knee, in the shafts of bone, which I show you as demanding treatment by this method; but I shall not for the present say more on this subject, having given ample grounds to justify the operation, and more especially having shown that the severer measures—the taking out wedges of bone—are quite unnecessary.

* It is only right to say, that in a private letter Dr. Ogston tells me that he believes the operation has been performed about thirty times, and he is not aware of any ill effects having followed.

Fig. 5.

Fig. 6.

CLINICAL COMMENTS

DYSIDROSIS AND ITS MORBID ANATOMY.

Delivered at University College Hospital.

BY TILBURY FOX, M.D., F.R.C.P.,
Physician to the Department for Skin-Diseases.

GENTLEMEN,—For some years I have taught that there exists a special inflammatory disease of the skin, commencing in the sweat-apparatus, and characterised in its early stage anatomically by the development of little vesicles imbedded in the skin, which occupy the site, and are produced by the distension, of the sweat-ducts by fluid sweat rapidly becoming mixed with and altered by inflammatory fluid. This disease is usually confounded with acute eczema.

A typical case was admitted into the Hospital a fortnight ago, under my care, and exhibited the disease in both its earlier and later stages. I pointed out to you amongst other things the naked eye characters of the disease at its commencement; how the ridges of papillæ on the palms appeared to be redder and more distinct than usual, from the fact that they were in a state of tumefaction; how the sweat-follicles, or rather their orifices, appeared to be peculiarly distinct and recognisable; and how these follicles were apparently distended to form vesicles, which looked like little sago-grains imbedded in the skin. At least, these early vesicles were seen to be deeply seated and not produced by any elevation of the cuticle, and we thought we could make them out to occupy the site of the sweat-ducts, and trace transitional stages between increased distinctness of the follicular orifice and the formed vesicles. I explained also that the sweat-duct opening could be clearly made out in the centre of the imbedded vesicle.

I promised to try to obtain the patient's consent to the removal of a piece of skin for careful examination; and you will be glad to hear that I have succeeded. Some of you saw me mark between two ink lines a portion of skin containing a few ridges of papillæ, where I stated that characteristic vesicles existed in an early stage, *i.e.*, about the fourth day of the disease. The portion of skin was removed, and Dr. Crocker kindly took charge of it for the purpose of preparing some microscopical sections, which he has accordingly done with much success. Dr. Crocker and I have carefully examined these preparations, and I will now acquaint you briefly with the main results obtained. You shall examine, however, some of the preparations for yourselves.

It has been stated lately by several observers that dysidrosis is not a disease of the sweat-apparatus, and Dr. Robinson of New York especially, in a recent article in the *New York Journal of Dermatology*, professes to have proved that the vesicles are formed by distension of the rete mucosum by inflammatory fluid effused from the vessels of the papillæ; and he figures the vesicles seated over the papillæ.

Whether Dr. Robinson's case was a true instance of dysidrosis or not I cannot say, but our present case undoubtedly is; and what we find in our specimens is conclusive evidence that the sweat-ducts are very large and in some cases distended at their upper part, and that the vesicles are formed in connection with the sweat-ducts. Out of seventy or eighty specimens, we can only detect two instances of vesicles having any definite relation to the papillæ. The majority are distinctly formed between the papillary projections of the rete, their central axis being opposite to or a continuation of the depression in the rete answering to the usual spot where the sweat-coil enters the rete from above. In some cases, the duct, as it enters the rete, seems larger, as though commencing to dilate; but we can trace the sweat-ducts entering the little vesiculations or globular dilatations, sometimes at the central point of their summits, at other times more to the side, but still distinctly entering. We can see the sweat-ducts leaving the base of the vesiculations, in some cases at the central point. In some specimens, the duct projects slightly into the vesicles, and then its continuation is seen running from the direction of the bottom of the vesicle and continuing its course through the corium. There is one remarkable specimen of a twin vesicle with two contiguous sweat-ducts clearly entering the vesicles. In none is the horny layer of the cuticle raised into vesiculations at the early stage of the disease. We have searched in vain for the early phenomena of *eczematous* inflammation. In our sections, the sweat-ducts are everywhere unusually well seen: Dr. Robinson figures none. As to the changes that go on in the deeper portions of the sweat-gland, further investigation is needed; but I have

little hesitation in saying that I regard the appearances seen in some of the sections as indicative of commencing inflammation. The cell elements of the wall of the gland-ducts and of the tissue of the gland-coil and its envelope seem augmented.

To my mind, the views I have taught in this School about dysidrosis are fully vindicated by these preparations. In my *Atlas*, published in 1877, I remarked that "if the skin be examined at an early stage with a lens, in many cases it will be seen that these little pearly spots answer exactly in situation to the sweat-ducts, and indeed they are distensions of the sweat-apparatus. This has been represented in fig. 3, which was the exact appearance seen in the case, and which was most plainly put by several others beside myself. This conclusively proves that the disease is essentially a disorder of the sweat-apparatus". As to the mechanism of the production of these vesicles, I wrote as follows, in 1873. "It seems to me that there is a sudden efflux of sweat, and the flow is so rapid that it cannot escape, the whole gland is distended, at least its duct, and the fluid presses up from below only to block up the upper portion of the duct by pressing together the twists of the duct in that part of the cutis where it runs in a spiral manner. If there be sudden pressure from below, the spiral twist of the duct must greatly favour the dilatation of the duct. In sudamina, I take it, the opening is plugged by exuviae, and the sweat finds its way laterally between the horny layers of the cuticle....." I think the basis of the above explanation holds good. Dr. Crocker and I propose to work out the anatomy of dysidrosis, as far as we can, more fully, and to place on record our joint observations on the matter. I thought it well, whilst the clinical features of our recent case were fresh in your minds, to show you these specimens, and thus vindicate the correctness of my teaching on the subject during the last few years.

[The above noted points were then fully demonstrated by the specimens.]

DIPHTHERIA.

By ROBERT BELL, M.D., F.F.P.S.Glasgow,

Physician to the Glasgow Institution for Diseases of Women and Children, etc.

IN January 1876, it was my privilege to publish in the JOURNAL a short account of the plan of treating diphtheria, which I have adopted during the past few years. It is now my desire to detail the history of other cases of the disease which have passed under my notice since that date. It will be remembered that, under the treatment which was advocated, all the patients recovered, with the exception of two, who proved themselves so obstinate that any attempt to carry out my wishes was frustrated. Since the publication of the paper referred to, I have met with at least eight well marked cases of this disease, all of which recovered. I am induced to give an account of my further experience of this mode of treatment for many reasons, chief amongst these being that my medical brethren, who were in communication with me on the subject after the appearance of my former paper, may have further proof to support them in their endeavours to combat the disease by the means which have proved so successful in my hands.

Cases I and II, M. F. and A. F., sister and brother, aged 10 years and 8 years respectively, were both prostrated on the same day. The film was spreading very rapidly over the tonsils, and there was considerable fever. The throat of each patient was freely painted every two hours with the following application: glycerine of carbolic acid, the strong liquor of the perchloride of iron, and sulphurous acid, of each three drachms; and the following mixture was given: chlorate of potash, two drachms; sulphurous acid, two and a half drachms; glycerine, one ounce; and water, to four ounces: two teaspoonfuls to be taken every two hours. In this way, while the patients were awake, an antiseptic was brought into contact with the diseased surfaces every hour. Port wine, soups, and milk were also given freely. The tonsils had only been painted a few times when the film showed signs of ceasing to spread; and within four days all the diphtheritic membrane had disappeared, and, saving a considerable amount of prostration, the patients were pretty well. A course of tonic treatment, however, soon removed this debility.

Case III was confined to one member of the family, but the disease was epidemic at the time. The patient was a girl thirteen years of age. The treatment as described above was adopted, and the disease ran very much the same course as in the two first mentioned cases.

Case IV was the most intractable attack of diphtheria that I have seen. The patient was an only daughter, aged 16, and before her illness was a remarkably healthy looking girl. I saw her first on the 26th December last, and then considerable areas on both tonsils were covered with the fungoid deposit. The treatment was immediately

commenced, and most rigorously carried out; but in this instance, it seemed for some time to have no control over the disease, for the false membrane continued to spread, till on looking into the throat nothing could be seen but the diphtheritic deposit. The treatment, however, was persevered in most persistently. Unfortunately, when the disease was about its worst, I became so unwell that I could not leave my bed for a day, and a friend kindly took charge of the case for me, who saw that my instructions were most rigidly carried out. The father of the child, feeling desperate, asked to be permitted to see me in bed, to ascertain if nothing else could be done to relieve his daughter, my friend having looked upon the case as hopeless. I suggested a consultation, but the consultant said he could only confirm what my substitute had already said. Both, in fact, viewed the condition of the patient as being beyond hope of recovery. During all this time, be it remarked, the antiseptic application to the throat had the effect of preventing the poison from being absorbed into the general system, and on this account, I thought there were still reasonable grounds for hope. Having made the parents understand this, I urged them to persevere most conscientiously with the treatment, which they did; and with the assistance of my friend Dr. Brock, nothing was lost for want of a thorough application of the remedies. On January 3rd, the symptoms began to abate; and from that time, her recovery was uninterrupted.

Cases V and VI were brother and sister, the only children of the family. Their history is very similar to that of Cases I and II, and their recovery was quite as complete; though, in the girl, there still exists a great weakness of the throat, rendering her very prone to tonsillitis.

Cases VII and VIII are very recently recovered from an attack of diphtheria. They are now quite rid of the disease, but are still suffering from the resulting weakness. They are likewise brother and sister, four and six years of age. It may be interesting to note that the laundrymaid in this family had an attack of diphtheria about eighteen months ago, from which she recovered under similar treatment.

Since the above was written, another child of the same household has been attacked, but is now on a fair way to recovery.

I would remark that, in every house where the above cases occurred, the arrangements for supplying the inmates with water were defective. In every instance, the drinking-water was drawn from a cistern, which was placed above the water-closet and bath-room; and when the cisterns were examined, they were found to contain an immense accumulation of slimy matter of a green colour, which under the microscope proved to be loaded with minute organisms, the greater number of which were of the same form as blood-corpuscles, and about the size of an inch in diameter. There can be little doubt that these microscopic bodies were the germs from which the disease sprang; and there can no estimate be formed of the immense amount of preventable zymotic disease which is constantly attacking the community under similar unsanitary conditions. It behoves us, then, as custodians of the public health, to insist that such unscientific, nay criminal, modes of constructing houses be prevented.

P.S.—The above paper was written in the autumn of last year, and within the period which has elapsed since then, twelve other cases of diphtheria have come under my observation, all of whom have recovered under the same treatment. I may mention that five out of this number occurred in one family. Again the cistern-water was at fault.

EXCISION OF THE TONGUE BY IMMEDIATE LIGATION.

By WILLIAM FEARNLEY, L.R.C.S.Edin., Lerwick, Shetland.

THE publication of Mr. Lund's case of removal of the tongue by scissors induces me to publish the following case.

Christina J., of Tingwall parish, came into Lerwick to consult me regarding a sore on her tongue. She came to me on November 6th, 1875. She was then aged 66; was living with a sister older than herself; had a good family history; had enjoyed average health all her life; had never been married. I found a large "sore" on the right border of her tongue opposite to and touching the only tooth in her head: a molar in the lower jaw, with a sharp inner edge. The sore had all the characters of an epithelioma, and involved the anterior third of the posterior half of the right lateral half of the tongue, which was much indurated. The glands were, so far as I could make out, unaffected. I recommended extirpation, to which she readily consented. She, with her sister, took a suitable room in the town, and on the 9th I, with two assistants, proceeded to remove the whole organ.

She was put deeply under the influence of chloroform (given on four