

gone from his ankles; very slight pain in knees.—Continue hydriodate of potass.

17. Has been up every day since the 13th, and now feels no pain except a slight one in his knees when he walks; pulse 64; tongue natural; bowels regular; sleeps well; appetite good; no thirst.—He continued the hydriodate (six grains in the day) until the 23rd, when he ceased, and he had no return of the complaint.

ON

THE COMPOSITION OF MOULDING TABLETS FOR FRACTURES, &c.

By ALFRED SMEE, *Dresser at St. Bartholomew's Hospital.*

THE importance of a substance that can be moulded accurately to any part of the body, at a moment's notice, must be admitted by every member of the medical profession; yet many difficulties attend the formation of a composition which shall, at the period of its application, be so yielding and soft that it may take an accurate cast of any part, and when dry shall still retain the form given to it, and become sufficiently hard to resist external impressions, and devoid of brittleness and much flexibility; and further difficulties present themselves when the capability of its being quickly dried is required; the advantage of lightness and cheapness would also be a great desideratum.

As I had frequently noticed that the combination of gum arabic and whiting, when dry, possessed great hardness and toughness, and was yet so free from brittleness that it could scarcely be pounded in a mortar, I was determined to ascertain how far it would answer to make tablets which might be used to form extemporaneous splints.

For this purpose a piece of coarse sheeting was copiously brushed over on one surface with a thick solution of gum, after which it was covered with a composition made by rubbing whiting with mucilage, continually adding the powder until the whole was of the consistence of a thick paste; a second piece of sheeting was now rubbed over on one side with the solution of gum, and the moistened side applied upon the composition with which the piece of sheeting had been covered, and we thus had two layers of sheeting with an intervening layer of the composition of mucilage and whiting, forming a thickness which might be increased or diminished as strength or lightness is desired. The whole was then dried, and formed a tablet about the thickness of slight pasteboard.

This experiment succeeded beyond my most sanguine expectations, for whilst the

tablet remained dry it was exceedingly hard, but when sponged over with a little warm water became so yielding that by moulding it with the fingers a cast could be taken of any part of the body. The hand and knuckles were defined with great accuracy, and I succeeded by a little management in taking a cast of the greater part of the face.

It is sometimes advisable not to allow the substance to dry upon the part on which it is moulded; but after the depressions and elevations have been traced with the fingers it should be carefully removed and partially dried before the fire, and as soon as the texture is sufficiently dry to retain its shape, it may be placed near a stove, or even on the hob of a grate, without fear of being corrugated, or becoming otherwise deformed. In many cases, however, this drying is quite unnecessary, it being requisite only to envelop the moist tablet with a bandage. A cast thus taken is extremely hard and tenacious, so that, when not much thicker than a wafer, it may be struck violently and repeatedly against any hard substance, and not be destroyed. It possessed but slight flexibility, and after having been bent, it returned to its previous form, showing considerable elasticity. It was neither liable to be torn nor broken; and, lastly, it possessed the advantage of lightness, combined with durability.

Whilst in search for a moulding substance, I thought it advisable to try various compositions, in order that the best might be selected, but none appeared so excellent as that last described.

A composition of powdered starch and gum was spread upon linen, wetted with the solution, as in the first instance, when it afforded a good and firm tablet, but perhaps not equal to the first.

A paste made with gum and flour formed a good composition, but in all cases where flour is used there is a liability to more or less contraction. A mixture of plaster of Paris and gum dried very speedily, but was apt to crack, and did not wear well.

Compositions of white of egg, with the same substances to thicken it as were used to thicken the solution of gum, were next tried, the linen cloth being first smeared over with the albumen, but none were found to answer; and it was singular that the mixture of the sulphate of lime and the white of egg had so little firmness that it fell to powder when dry.

Boiled glue and whiting formed a hard tablet inferior to, but slightly cheaper than, that first described, and its unpleasant smell would prevent its use except in hospital or military practice.

Similar compositions of flour-paste were found utterly useless, having neither consistence, cohesion, nor strength. The decoctions of the Iceland moss and linseed were found

also inapplicable. The preparations of dextrine were next tried, and a mixture of carbonate of lime with the solution of dextrine made a composition which answered very well. Of all these preparations, and many others that were tried, few were applicable; and none in all respects equal to the composition of gum and whiting, both of which substances are always easily obtained, and have the additional advantage of cheapness.

The solution of gum which was found most eligible contained ten or twelve ounces of gum arabic to the pint of water.

As far as regards the nature and texture of the cloth, it is to be remarked that linen is stronger than cotton, and less liable to be torn, and therefore to be preferred. Of the various kinds of linen none moulds so perfectly as moderately coarse old sheeting; for when the tablets were made of finer Irish linen they were very inferior in this respect.

The application of these tablets is rather extensive; they may be used with great advantage for all fractures of the metacarpal bones; also for those of the forearm, or even of the humerus. When the humerus is fractured, the method which has been adopted is, to cut a piece of paper somewhat into the shape of the required splint; it should cover a portion of the pectoralis major, and extend as high as the bend of the neck, and include the whole of the scapula; from this broad plate a piece descends to the bend of the elbow, and should be sufficiently wide to cover about two-thirds of the outer part of the arm. The paper is then placed on one of the prepared tablets, which is cut to a similar shape. The piece, thus prepared, is moistened until it becomes perfectly soft, and it is then moulded on the arm and neck. From the general shape of these parts there will be found a superfluity of substance about the deltoid, which must be pinched up and turned down, so as to force a fold over the other part. The splint, then, may be in a degree dried, and its inner surface lined with lint. The whole is to be enveloped in a starched roller.*

This mode of proceeding may appear tedious, but it is a source of much comfort to the patient, for whilst the upper arm is enveloped in this hard case, so that it is quite immoveable, the forearm and hand may be left loose, and the patient may, in some degree, enjoy the use of them. The benefit of this mode of treating fractures is not confined to the patient only, it lessens also the labour of the surgeon; for when the injured limb is once put up in this manner it requires no further attention for days, weeks, or even till the cure is accomplish-

* The roller is merely soaked in boiled starch, and wound up in the usual manner before it is applied.

ed. Its application to chronic diseases of the joints will be found particularly useful. In these cases two lateral splints are to be formed, and enveloped in a starch roller.

It is hardly necessary to add, that in fractures of the lower jaw it must prove a valuable auxiliary. Great, however, as these advantages may be, perhaps they are trifling in comparison with the importance of its application to simple fractures of the leg. The mode of treating at St. Bartholomew's Hospital has been for some months the method first adopted by Mr. John Lawrence, of Brighton. His plan was to form two strong splints on either side of the injured leg by successive layers of pieces of bandage, united together by white of egg and flour. Now, as far as his method is concerned, it requires no improvement, as durability, strength, and an accurate cast are obtained by this mode of proceeding, and the numerous cases which have been treated by it at the hospital show its complete success. By using the tablets formed of gum and whiting, upon the same plan as that of Mr. John Lawrence, a great saving of the surgeon's time is effected, and equal firmness and durability obtained. The mode in which I have made splints for the leg is first to obtain the exact shape by drawing a piece of sheeting or paper round the leg, and marking the part which corresponds to the tibia for the whole length of the leg, and continuing the line on the foot to the extent it may be considered necessary to cover.* By this means it is apparent that the exact size of the limb is obtained; but as the leg is to be enclosed by two splints, it becomes necessary to divide the cloth into two, which will give an exact pattern of either splint. These splints are to be moistened and moulded, and after being first lined with lint or leather, the whole is to be enveloped by a roller soaked in boiled starch.

This composition of gum and whiting has answered perfectly in the cases in which it has been tried, and splints made of it are, perhaps, superior to the splints made with flour and white of egg, because when dry they preserve accurately the shape of the limb, and do not at all corrugate, which all compositions of flour are liable at times to do. Fractures of the patella are treated in a similar way, a splint being placed on either side of the knee, extending from the centre of the thigh to about the centre of the leg. The patella is not to be covered with these splints, but a gap corresponding to its shape left, and the two pieces or

* Either splint should overlap the heel and under surface of the foot in cases where they are used immediately after the accident, but where this application is delayed this is of no importance.

splints are not to meet accurately at any part, but an interval is to be left of about three-quarters of an inch, or an inch, during their whole extent. In enveloping these splints for fractures they are not to be applied when there is much inflammation or swelling, but the part should be allowed first to get into a perfectly quiet state, or leeches, cold water, and poultices should be applied, if necessary, to effect this object. In general a delay of a week, ten days, or even sometimes three weeks, is required; but in some favourable cases there is no occasion to wait, and the splints may be applied with safety and advantage on the second or third day after the accident. This mode has also been adopted in favourable cases of compound fracture; but most surgeons are agreed never to cover these wounds with concealing bandages. It is not for me to expatiate upon the advantages with which this method of treating fractures is attended, for that belongs rather to Mr. John Lawrence, as the first adopter of the principle, but the fixing of the bones more firmly and securely than can be accomplished by any other method; the prevention of loss of health, by enabling the patients to walk on the fourth or fifth day after receiving the accident, and permitting them to be removed to a situation more healthy and airy; the prevention of stiff joints, and the more speedy and final uniting of the bone, are advantages too great to be passed over unmentioned.

These advantages are likely to be enjoyed by a greater number when the time required for the first application of the splints is diminished, and the objection is removed of allowing the limb to remain without bandages during the time required for the drying of the splints; the tablets which I have described possess these additional advantages, and with these superior cheapness is also conjoined.

Bank of England, Feb. 9, 1839.

THE
INFLUENCE OF THE IMAGINATION
ON THE
FŒTUS IN UTERO.

To the Editor of THE LANCET.

SIR:—The extent to which many are disposed to carry the belief that the foetus is affected by external impressions upon the mother, or by her imagination, is too notorious to be questioned. Some may find a reason for this in the supposed ignorance of the parties; but strange and striking confirmations of the fact present themselves among the most intelligent, and among those, too, who least sanction the belief of such a doctrine.

At a very early period of the world the doctrine was believed in, an illustration of which we have in the account of Jacob's stratagem. Hippocrates was a supporter of the doctrine; for we find that he maintained, in defence of a noble female who had borne a coloured child out of the course of nature, that a picture, which hung in her apartment, of an Ethiopian, was sufficient to account for the appearance of the child. Galen adopted the same opinion. It is recorded, too, that Fabius Quintilian preserved the honour of a female who had borne a negro, the parents being white, by boldly asserting that she had, during pregnancy, taken great pleasure in examining the picture of a negro which was placed in her chamber. Heliodorus' interesting novel of the "Loves of Theagenes and Characlea," is hinged on the fact of the latter being born white, of Ethiopian parents. Dr. William Hunter entertained an opinion, founded on strict observation for a long course of years, altogether different from those above noticed. A very puzzling case, touching the question, once occurred under the doctor's own eye; yet he would not be a convert, and most ungallantly nourished a suspicion of the fidelity of his fair patient, who had borne as heir to a title, to a native of Britain, a Mulatto.

With the breeders of cattle of the present time, the opinion upon which Jacob of old seemed to have acted, universally prevails. I have notes of some remarkable confirmations of the peculiar influence under notice occurring in the brute creation, which, however, I shall not at present detail.

There are already numerous cases on record which prove that external impressions upon the mother, and that her emotions affect the child in utero. External deformities and marks have been more particularly noticed; but may not the brain, as well as the skin or form, be influenced? May not those organs, which are only developed in the independent state of life, be set in the order of play in the dependent and unconscious state of being by the mother's imagination or state of mind? Here is a subject for inquiry; but I shall not enter upon it, contenting myself with relating a few cases which have come under my own observation. I may add that I have no doubt whatever of the truth of the statements which I received in connection with each case.

1. A girl approaching an interesting age, who had become extremely anxious to have a mark upon her face removed, consulted me. The mark is a fair profile of a bird, black, and covered with downy hair, and situated on the right cheek, immediately under the eye, the head being towards the temple, the body placed over the superior part of the cheek, and the tail, somewhat short, occupying the greater part of one