KING'S COLLEGE HOSPITAL:

THE USE OF PLASTER OF PARIS IN FRACTURES.

By P. W. SWAIN, Esq., House-Surgeon.

THE use of plaster of Paris bandages in certain fractures of the upper and lower extremities has of late become so frequent at this Hospital, and has been attended with so much success, that perhaps a few remarks explanatory of its application, together with the record of some cases illustrative of its use, may not be unacceptable.

The usual manner in which a plaster of Paris bandage is applied is as follows:—An ordinary roller of unbleached calico is thoroughly saturated with cold water; about two pints of cold water are then poured into a basin, and to it is added, by handfuls, the finest ground plaster of Paris (the mixture being the while constantly stirred round with the hand), until a paste somewhat thicker than cream is obtained. The end of the wet roller is then placed in this mixture; and being gradually unrolled by an assistant, is re-rolled under the plaster of Paris, in such a manner, that the whole bandage passes through the paste and becomes saturated with it. The injured limb is then placed in proper position, and the roller is passed *rapidly* round it, twice or thrice doubled, some of the paste being smeared over the surface of the bandage between each layer. The outer surface is then smoothed over with a spatula, and the whole is left to "set", which process is accomplished in from twenty minutes to half an hour. During the process of setting the limb must of course be retained in position, by sandbags or some other convenient method. After the bandage has set, its surface is painted over with white of egg, which prevents the plaster of Paris from cracking or crumbling off. The great point to be attended to in applying this bandage is to do it with the greatest rapidity; for, unless this is attended to, the plaster sets before it is applied, and the bandage becomes useless. Another point to be observed is that the bandage must be applied with tolerable firmness, as we find that, unlike the starch or dextrine bandage, which must be put on very lightly to allow for shrinking, this has a tendency rather to expand and make a loose and useless case for the limb.

The advantages attached to this form of bandage appear to be many:

First. Its simplicity, and the celerity with which it may be applied. With plaster of Paris at hand, as it now always is in the wards of our hospitals, a fracture may be permanently put up, within ten minutes after admission, before the swelling otherwise consequent on the injury can supervene.

Secondly. The quickness with which the plaster sets renders its application to recent fractures admissible, as it avoids the necessity of keeping the patient long in a constrained position, and the risk of the ends of the bones being put out of place by any untoward movement.

Thirdly. The eventual cure of the fracture is much hastened by getting the patient out of bed on the day after admission, and allowing him to leave the hospital in perhaps less than a week, both which results are obtainable by the use of this bandage.

Lastly. The cleanliness of its application and its after appearance are not the least of its recommendations. Its use was first introduced into our hospital by the late house-surgeon, Mr. Heath, who saw it applied by M. Maisonneuve, the surgeon to La Pitié in Paris.

The following are some of the cases in which this bandage has been used:

CASE I. Fracture of the Tibia. Thomas S—, aged 8, was admitted under the care of Mr. Partridge on June 21st, 1857, with transverse fracture of the left tibia, caused by a fall from a ladder. On admission, there was no displacement, a little swelling, and much discolouration about the parts. An evaporating lotion was ordered; and on June 23rd, all swelling having subsided, a plaster of Paris bandage was applied. After its application the patient suffered no pain or inconvenience, and was discharged on July 4th. Three weeks afterwards he presented himself at the hospital, when the bandage was removed, and perfect union found to have taken place.

CASE II. Fracture of the Fibula. John E— was admitted under Mr. Bowman's care, on July 2nd, with fracture of the left fibula, three inches above the malleolus. The accident was caused by his slipping off some palings up which he was climb-

ing. The limb was much bruised and swollen, and evaporating lotions were therefore applied. On July 6th, the swelling having subsided, the leg was put up in plaster of Paris, and the patient allowed to get up from bed and move about the ward with a crutch. On July 15th, he was discharged; and three weeks after, the bandage was removed and the bone found to be united. He suffered no pain whilst wearing the bandage.

CASE III. Fracture of the Malleolus. Margaret A—, aged 56, was admitted under Mr. Bowman's care, on July 31, with fracture of the left external malleolus. The accident happened by her slipping down some stairs. The ankle was much swollen and very painful. Fomentations were kept on until August 3rd, when the swelling having nearly all gone, a plaster of Paris bandage was applied. On August 8th, the remaining swelling having gone down, the case became loose. It was then slit up, the front and the cut edges pared and brought together with a bandage. On August 15th, she was discharged able to walk pretty well with a stick.

CASE IV. Fracture of the Tibia. William S—, aged 42, was admitted under Mr. Bowman, on October 16th, with fracture of the tibia and fibula, about an inch above the malleoli. There was no displacement or swelling. The accident was caused by some old stairs giving way with him. The fracture was put up immediately on admission in plaster of Paris. He was able, two days after, to move about the wards, complained of no pain or inconvenience, and was discharged on October 31st. About a month after his discharge, the bandage was removed, and the fracture found to be completely united.

CASE V. Fracture of the Fibula. John L—, aged 34, was admitted under Mr. Fergusson, on February 2nd, with fracture of the left fibula, about the middle of the lower third. The accident was caused by his slipping off the curb-stone. On admission, there was no swelling, and very little displacement. The limb was immediately placed in a plaster of Paris bandage. On the next day, he was enabled to walk about the ward with a crutch, and complained of no pain. On February 13th, he was discharged. On February 20th, he presented himself at the Hospital, having come some distance with the aid of his crutch. The bandage was entire, and the patient had suffered no pain.

CASE VI. Fracture of the Humerus. Mary S—, aged 42, was admitted February 5th, 1858, under Mr. Bowman, with a fracture of the left humerus, at the junction of the middle and lower third. The accident was caused by her being knocked down by a cab. There was no swelling about the parts. The arm was bandaged from the hand to the elbow. The limb was then semiflexed, and a plaster of Paris bandage was applied, extending from just below the elbow to the axilla. The arm was retained in position with a bandage until the plaster set. She experienced no pain, and the arm appeared in good position. On the 10th, she was made an out-patient. She has since presented herself on two or three occasions. The bandage remains intact, and she complains of no pain.

These cases have been selected out of a great number that have occurred in the Hospital, as illustrative of the use of plaster of Paris in fractures. Fractures of the fibula seem to be those in which its use is most frequent; but, as the above cases show, any simple fracture where there is not much displacement may be treated in a similar manner.

ST. BARTHOLOMEW'S HOSPITAL.

AMPUTATION FOR ABSCESS IN THE HEAD OF THE TIBIA.

Under the care of W. LAWRENCE, Esq.

[From Notes by NEWTON LEE, Esq., House-Surgeon.]

EDWARD PORTER, aged 45, was admitted July 23rd, 1857, on account of a supposed abscess in the head of the tibia. He said that, about three weeks after Christmas 1856, he felt a tenderness in the head of the right tibia, on its outer side, close to the head of the fibula, which made him limp in walking, and gave him great pain if it was touched. He did not, however, do more for it than give it such rest as the press of business about that time would permit. About the end of the following May, he went to a metropolitan hospital as an out-patient, where he was twice blistered, each time with temporary relief.

On July 23rd, he slipped down, with the leg bent under him, which gave him intense pain; and he went to some hospital, where he was ordered to have his leg bandaged. Not being satisfied with this treatment, he applied at this Hospital, and was admitted. By this time the knee had become considerably