

REPORT

OF THE

MEANS EMPLOYED IN MEDICAL SCHOOLS OF GREAT BRITAIN FOR THE PRESERVATION OF SUBJECTS FOR DISSECTION.*

ST. BARTHOLOMEW'S HOSPITAL.

MR. HOWARD MARSH, Demonstrator of Anatomy, writes as follows.

The preservative fluid in use here for some years was arsenic, in a watery solution of carbonate of potash. It was only moderately efficient. In the winter it prevented decomposition, but in the summer bodies could not be kept for more than a fortnight or three weeks.

Garstin's embalming fluid has been employed since the summer of 1871. I do not know its exact composition, but its main ingredients are, I believe, carbolic acid, arsenic, and glycerine. Its action has been very satisfactory. One of the first subjects treated with it was used by Mr. Smith for his anatomical lectures in October, November, and December, of last year. This subject was injected with four pints of the fluid on September 7th. During its gradual dissection it was found to be in admirable condition: the muscles retained, in singular perfection, their natural firmness and ruddy appearance; small nerves could be readily traced and isolated; the cellular tissue was somewhat condensed and toughened, but was very easily removed. One of the lower extremities, wrapped in linen and occasionally moistened, was kept in a spare room from December to March; and it remained apparently without change, except that the foot, which was uncovered, gradually became dry, shrunken, and dark coloured. At the end of seven months from its first preparation, Mr. Smith completed its dissection, and it still had, except where it had been allowed to dry, all the aspects of a recently injected limb.

Subsequent trials of this material have had an equally favourable result. Fresh subjects have been preserved from putrefaction; and in those in which the process had already commenced it has been at once arrested, and where the abdomen, face, and other parts, had assumed a green tint, the natural colour has been in a few days restored. No decomposition has occurred during dissection, and there has been no formation of mould. It has been observed that detached portions of muscle have slowly become dry, shrunken, and blackened, but they have never putrefied.

At the end of July, the storing of subjects for the present session was begun; since that date, fifteen have been accumulated, and are now in process of dissection. They are all in fair condition; the surface has become somewhat "bronzed", but in many this change is scarcely noticed; the cuticle is more or less detached from the hands, feet, and other parts; the muscles are dark-brown in colour, but firm and conveniently moist; the cellular tissue is easily removed; the nerves are dark coloured, and some are softened, but for the most part they are readily traced and isolated. The brain is found in the majority of the bodies to be not well preserved, and in some it is unfit for dissection.

The method of storing subjects has been the following. Three pints of Garstin's fluid are injected with a large syringe as soon as the body is received; on the following day three pints more are thrown in; and on the third day the injection with wax is performed. The subject is then laid in an underground chamber, upon blocks placed under the shoulders and pelvis. This chamber, prepared for the purpose, holds about twenty bodies. Its summer temperature was usually about 50 deg. Fahr. At first it was made almost air-tight by a double door, close fitting, and lined with felt: it was soon found, however, that the bodies grew clammy and wet, and that the cuticle became detached by serum, which collected beneath it at the dependent parts. The door was afterwards left open, so that the chamber was ventilated into a long passage, and the subjects were turned over from time to time and carefully dried with a soft cloth. Small openings were made in bodies that were dropsical, so that the serum drained away.

From these details the following conclusions may be drawn. Garstin's preparation is highly efficient; it will, if used soon after death, entirely prevent decomposition; if decomposition have already taken place, unless it be very far advanced, the fluid will completely arrest it. By the use of this material, subjects may be preserved in an underground chamber at a temperature of 50 deg. Fahr. for at least three months during the hottest period of summer. The degree of preservation is such that the tissues, with the exception perhaps of the cerebral, may be satisfactorily dissected. The amount required for each body is about six

pints—three pints on the first and three on the second day. The wax medium for filling the arteries must be introduced as soon as possible, say on the third day: if this proceeding be delayed the wax will not "run", and a sufficient quantity cannot be introduced. Pains must be taken to preserve the cuticle; to this end the subject must be carefully handled, and the ventilation of the store-chamber must be regulated so that the surface of the bodies is kept free from excessive moisture; for, if the surface be wet, the cuticle slides off from the hands, feet, and other parts. It is advisable to turn the bodies from time to time, so as to air the dependent parts, and also to prevent the gravitation of their fluids too much in one direction.

During dissection, parts treated by this method are likely to become too dry, especially if the cuticle have been lost: it is therefore proper, when dissection is not actually going on, to wrap the part in cloths moistened with weak spirit and water, and cover them closely with some waterproof material. These precautions taken, bodies may be kept under dissection in the summer for at least a month, and in the winter for at least three months.

WESTMINSTER HOSPITAL.

MR. RICHARD DAVY, demonstrator of anatomy, states that the following are the ingredients used by the school-porter for subjects: 1 lb. of arsenious acid, 1 lb. of carbonate of potash, two quarts of water; boil, and inject as much as is sufficient. This is named the preservative fluid, and precedes the injection of paint by sixteen or twenty-four hours. The arteries (through the ascending aorta) are injected by means of an eight-ounce syringe, with an admixture of red and white lead, patent dryers, and turpentine. We have used this injection for seven years, and find it answers well. The corrosive sublimate injection (as used in the Edinburgh University) is a very good one for preservation. Nervous structures we invariably preserve in alcohol or methylated spirit. Wet preparations are effectually kept in carbolic acid and water cisterns.

REPORTS AND ANALYSES

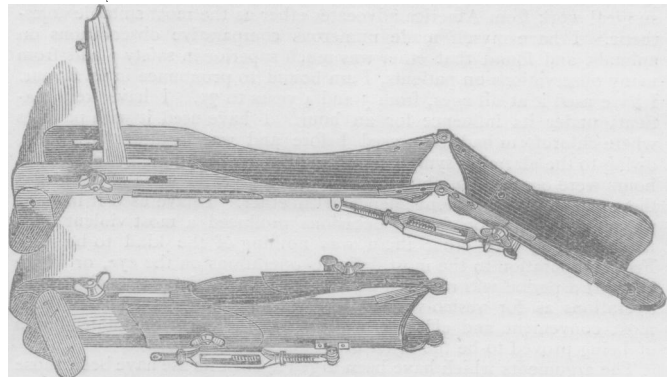
AND

DESCRIPTIONS OF NEW INVENTIONS

IN MEDICINE, SURGERY, DIETETICS, AND THE ALLIED SCIENCES.

NEW FORM OF MACINTYRE'S SPLINT.

THE subjoined drawings illustrate the advantages of an ingenious new form of "Macintyre's splint," made by Matthews Brothers, Surgical Instrument Makers to King's College Hospital, Portugal Street, W.C. When the instrument is in use, it is precisely the same as the old form of splint, the good qualities of which time and innovation have not yet superseded. When, however, the splint is not in use, by simply removing a screw, it folds up upon itself, as it were, occupying half the



space required for the old fashioned appliance, and will go readily into a drawer of moderate size. The sketch shows its compactness and portability, which, combined with the advantage of simplicity, will no doubt find much favour with the medical officers of the army and navy, where facilities of transport and stowage are of so much importance, as well as in private practice. Its presence also in an hospital will doubtless be much appreciated, as it will do much to render the splint-room more accessible and better arranged.

* Continued from page 384 of last number.