

PART FOURTH.

MATERIALS USED FOR DRESSINGS.

The various articles used in dressing wounds and the like, should be familiar to the dresser, even though some of them he may never use. Each surgeon will have some articles added to the list which he prefers either from habit or knowledge of its excellence, and it would be, if not impossible, unnecessary to attempt to include them all in our description. Those in more common use are as follows:

SPONGES are an absolute necessity, and must be selected with care, and kept scrupulously clean. The finest specimens are usually kept in the shops for surgical use, and must be free from grit or sand, of close texture, and absolutely clean, as far as possible. They should absorb quickly, and are better in proportion as the large openings, or oscula, are few in number. In using sponges to cleanse raw surfaces, care must be had not to rub, "or scrub" the sensitive parts; the water may be allowed to drip over the surface, or the sponge may be lightly pressed on the part. In absorbing blood, however, during the progress of an operation, the sponges may be pressed down deeply and firmly into the wound, both for the purpose of greater efficiency, and to avoid soiling the bed or table with bloody water. They should always be squeezed out in water, two or three times, before using for this purpose, as it will very greatly increase their absorbing power. Sponges that have been used in dressing ulcers of a specific character, or about the persons of those suffering from erysipelas, or any infectious or contagious disease, must never be

used a second time, at least not on another person. Under other circumstances, as in ordinary dressings, or operations, they should be scalded in *hot* water, as soon as their use is over, thoroughly dried, both by squeezing and exposure to the sun. In all cases, perhaps, it will be safer, and much lessen the danger of conveying infection, or setting up septic conditions, to destroy sponges that have been used four or five times, particularly when they have been saturated with pus. In hospital practice, I make it a rule to destroy all sponges after their second using. Even new sponges should be well cleaned, both by beating them with a switch, and washing in hot, followed by rinsing in cold water.

LINT is an article that occupies a very prominent place in the dressers outfit. It is made in different ways, and of different material, either kind being perhaps equally good in general, while special cases may require one variety in preference to another. *Common lint*, is simply the ravellings of old linen. *Charpie*, is made by cutting pieces of old linen into squares, of about two inches, and unravelling it thread by thread. *Patent lint*, is made by scraping up the surface of old linen with a dull knife, rendering the surface fleecy and soft. The patent lint sold in the shops is made by machinery, and differs somewhat in appearance, from the improvised variety, but has no particular excellence, as far as I know. As a substitute for the above, and rapidly taking its place in both private and hospital practice—*absorbent cotton* is an admirable article of dressing. It is made by taking the finest and cleanest specimens of cotton, freeing it of oil by treating it with potash, or even ether, boiling out the potash, and thoroughly drying. Manufacturers then prepare varieties of anti-septic cotton, by treating it with both borax, salicylic acid, or other medicinal substances, but in Homœopathic practice such preparations will be but seldom, if ever needed.

Finally picked *oakum* is also used in lieu of lint, by some practitioners, the tar being supposed to have some antiseptic properties.

Whether we use the different kinds of lint, cotton, or oakum, application to wounds, or for other purposes, is made by arranging the article in different shapes, the more common forms being as follows: A *pledget* (*plumasseau*) is made by rolling up a mass, of suitable size for the object sought, and flattening it between the hands. It is used to make a compress for an ulcer, to fill up depressions when applying splints or bandages, or to apply to a suppurating surface as an absorbent.

A *roll* is made by rendering a pledget cylindrical, by rolling between the hands, and tying a string about the middle. It is used for arresting hæmorrhage, by applying a bandage over it when laid parallel to the bleeding vessel; also to apply to deep wounds to absorb the discharges. When used for the latter purpose, the string is left attached, and cut long to facilitate its withdrawal.

A *bullet* is a small piece of lint rolled up, between the fingers, in a spherical form, as large as an ordinary marble. They are used to fill up suppurating or discharging cavities. It is a good practice to count the number of bullets used, and noting the number, see that all are removed when the parts are dressed. A deep abscess was once filled this way; the cavity not closing, after a suitable time had elapsed—was opened, and a bullet was found that had not been removed.

The *pellet* is made in the same way, is used for the same purpose, but is much smaller.

The *mesh* is similar to the roll, but the fibres are left loose, not rolled or twisted up hard. It is used to insert into deep wounds or sinuses, to prevent their healing at the outlet.

The *tent* is used for the same purpose, and is made by

twisting a portion of lint into an elongated cone. It may be covered with cerate to prevent its adhering to the raw surfaces. Sponge tents, sea-tangle, etc., do not enter into our list, as they are used for a different purpose, dilation, and are not recognized portions of surgical dressings.

The *tampon*, is a mass of lint, or a number of bullets, crowded into a bleeding cavity to arrest hæmorrhage. It is not of frequent use in surgical practice, being more applicable for uterine hæmorrhages as occurring in the practice of the obstetrician.

COTTON, the common article found in the stores, is an article that is useful for a variety of purposes in surgical practice. It will be found very useful in filling up depressions of a part prior to applying a bandage; to pad splints; to cover prominences that would be subject to injurious pressure or irritation, and for a host of similar purposes. The oil that it contains makes it very unsuitable for application to moist surfaces, or where there are purulent discharges; under such circumstances lint should be preferred.

ADHESIVE PLASTER is of various kinds, and in some form or another is a constant necessity in practice. The varieties of plasters are almost endless, some being used for retaining purposes solely, or to preserve coaptation of wounds; and others for medicinal purposes, or those of counter-irritation. With the last we have nothing to do, they not entering into the treatment of any case under our methods; the medicated plasters are likewise seldom if ever employed by the Homœopath, and need no particular mention. Opium, Belladonna, Lead, Cantharis and other medicinal agents are used in the preparation of the medicated plasters, in addition to the ordinary resinous material necessary to give the adhesiveness requisite. With the exception of the drug, therefore, which

is many times a proprietary preparation, the manufacture does not differ from the ordinary retaining plaster.

We shall consider three varieties, the ordinary adhesive, and isinglass plaster, and one that is designed to sustain considerable traction, used in making extension in the treatment of fractures and the like.

Adhesive plaster, is made by mixing resin and plaster of lead together, in the proportion of six to thirty-six, and spread upon muslin by machinery. To prevent its cracking when cold, a little soap is added. The plaster thus made is applied by slightly warming it, which softens it, thus adding to the adhesiveness. The objection to this article is the difficulty in detaching it, as the plaster becomes detached from the muslin, and adheres to the skin. There have been many modifications and improvements, in consequence, of late years, many of the plasters being protected by patent. The best form is made of a solution of rubber spread on strong muslin, which does not require either heat or moisture to apply. In all cases in which firm support is required, whether the parts are dry or covered by secretions, there can scarcely be a better plaster than this. The number of varieties make it impossible to notice them all, and as a matter of fact there is often but little choice. The preference is to be given to those which are unmedicated, have good adhesive qualities, do not irritate the skin, are easy of application, and can be readily removed.

Isinglass plaster is made of isinglass, dissolved in alcohol; TOWNSEND (VELPEAU *Oper. Surg.* I, 128), gives the following formula: "An ounce of isinglass is moistened by two ounces water, and let stand for an hour or two until quite soft; then add three ounces and a half of rectified spirits, previously mixed with one ounce and a half of water. Plunge the vessel into a saucepan of boiling water, and the solution will be

complete in a few minutes." With a broad varnish brush paint the solution on a sheet of oiled silk, or other thin light fabric, which has been stretched on a board. When this layer is dry, apply another, drawing the brush at right angles to the former layer; and so on until four or five coats are painted on. The last layer or coat must be slightly reduced by adding a little water. For all ordinary purposes, as dressing wounds, whether large or small—and after operations. I know of nothing that is superior to this plaster; for purposes of extension, as in fracture, it will not be strong enough. It is applied by moistening it with a damp sponge, and the sole objection to it is the fact of its becoming loosened by the discharges.

Plasters for extension, are usually made of some of the solutions of India rubber, spread upon strong muslin, leather, or canvas. They are used in treating fractures by the "American method," or for any purpose when great strength or adhesiveness is required.

COLLODION is a solution of gun cotton in ether, and is a very useful article of dressing when it is essential to exclude the air. It is applied by painting it on the part with a camels hair brush, or laying a piece of gauze, or lint, or a small piece of absorbent cotton on the wound, and painting the collodion over it. The ether rapidly evaporates, and leaves the cotton in the solution firmly adherent to the parts. To a raw sensitive surface, the collodion could scarcely be borne, and would cause much unnecessary irritation; the wound, therefore should always be closed, and the collodion applied over the other dressings, as adhesive strips or sutures.

CERATES AND OINTMENTS are practically one and the same thing the latter being somewhat softer than the former, from a slight excess of the oleaginous principle. Cerates are made by melting fresh lard and fine wax together in the

proportion of one to two, stirring them until cold. They are sometimes medicated, particularly with Arnica, Calendula, Hypericum, etc., the drug being in the proportion of one fluid-ounce to the pound of cerate. Cosmoline, or Vaseline, of which some of the parafines or extractives of Petroleum are used as a base, are very much used, and have a wide reputation as effective anti-septic dressing. Cerates and ointments, in Homœopathic practice, are chiefly used to protect open wounds, and the like, from adherence of the dressings; they *may* be used for medical purposes, but nothing is promised in this way that cannot be readily attained by other and more rational treatment.

POULTICES, otherwise called CATAPLASMA—are articles of dressing that are in frequent demand. Formerly there were a great many varieties of poultices used, for many different purposes, but of late years, and particularly in our school of practice, the number has been much diminished. I think all kinds of poultices may be included under three heads, and perhaps but one form under each, *viz.*, emollient, stimulating and antiseptic.

Emollient poultices, are those designed to allay irritation, and indirectly, by the attendant heat and moisture, suppuration is facilitated, and dead tissues more speedily removed. The common bread and milk poultice, familiar to everyone, is a popular form. Linseed meal, however, is unquestionably the most satisfactory, and is prepared as follows: Take *unpressed* linseed meal, say four ounces, and mix it slowly with ten fluid ounces of water. Spread on linen cloth, and apply to the part according to directions given below.

Stimulating poultices, may be made by adding brewers yeast to the flaxseed cataplasm, or some other stimulating articles, as mustard—or a proper yeast poultice may be made.

According to the *British Pharmacopœia*, the preparation is as follows: Take of beer yeast, six fluid ounces; wheat flour, fourteen ounces; water (100° F) six fluid ounces; mix the yeast with the water and stir in the flour, afterwards standing the mixture before the fire until it "rises." It is used to allay pain, as well as to stimulate feeble suppurative action. It is rarely if ever necessary, when the surgeon is familiar with the resources of our *Materia Medica*.

Antiseptic poultices are used, as their name would indicate, to guard against septic poisoning, to correct fetor as well as to arrest (?) gangrenous process. The addition of Carbolie acid, Salicylic acid, or some other known antiseptic, as Chlorinated soda—to the common emollient poultices will answer every purpose. If it seems desirable to make a poultice for this purpose alone, Charcoal or the Chlorinated soda may be made into a poultice, as follows: Powdered Carbo vegetabilis, say half an ounce, is mixed with two ounces of bread crumbs, one and a half ounces of linseed meal, and ten fluid

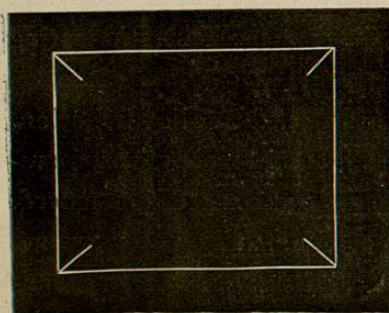


FIG. 11.

ounces of boiling water, or, four ounces of linseed meal, eight fluid ounces of boiling water, two fluid ounces of Chlorinated soda.

In preparing and applying poultices of any kind, the following is the neatest and best method: Take a piece of linen, cut square, an inch or two larger than the space desired to be covered. Cut the corners, with scissors, as in the figure. Then spread the poultice on with a thin knife, or spatula, to within an inch or two of the margin. Next fold down the edges, having previously spread a thin,

ounces of boiling water, or, four ounces of linseed meal, eight fluid ounces of boiling water, two fluid ounces of Chlorinated soda.

In preparing and applying poultices of any kind, the following is the neatest and best method: Take a

soft piece of gauze or cambric over the poultice. The folded margin, not being covered with the poultice, may be anointed with cerate, thus avoiding adherence of the linen to sensitive parts. The part should be shaved, if hairy, and the poultice changed as often as it becomes dry.

COMPRESSES are pieces of muslin, or lint, used for making compression on deep parts, or to protect raw surfaces from direct contact with bandages. They are made in many ways, most of them being simple modifications of three forms. Thus, the first (fig. 12), is made by folding muslin to several thicknesses, until the usual size or thickness is obtained, and is used to make pressure equally distributed over a limited extent of surface.

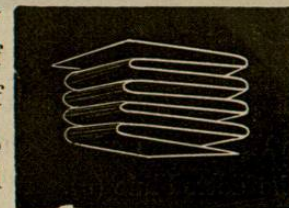


FIG. 12.

The second, called the *graduated*, or pyramidal compress (fig. 13), is made by making each succeeding fold shorter, so that the width is greater at the bottom than the top. It is used to make compression deeply, as over an artery or fistula. A modification of this (fig 14), is made by folding

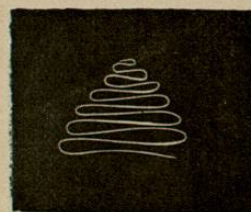


FIG. 13.

a number of pieces of muslin into squares of a constantly diminishing size, and connecting them with a stitch taken through them all when placed in position. It is used where pressure is to be carried deeply, but only to be exerted on a small point.

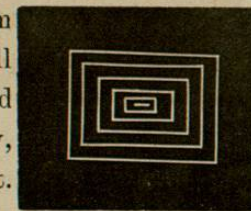


FIG. 14.

The third called the *cribriform* compress, is a single thickness of linen placed over a raw surface, and clipped full of holes to facilitate the escape of the discharges. Sometimes such a dressing is needed on the end

of a limb, or a stump after amputation. It may, also, be needed to apply a sheet of lint, spread with cerate, in the

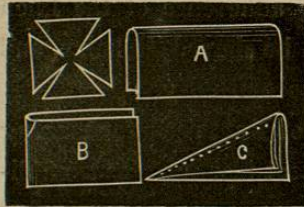


FIG. 15.

same way, and can be applied smoothly by making what is known as the "maltese cross," see fig. 15. Fold a square piece of muslin, of the requisite size, once on itself (*a*), having the corners and edges neatly meeting. Fold it a second time, in an opposite direction (*b*). Fold it a third time, diagonally (*c*), and with scissors cut it almost to the apex of the fold along the dotted line (*c*). In applying it, place the centre on the end of the stump or part, and smooth one arm of the cross over the part. The next arm is then to be folded in, overlapping the first; the arm on the other side in the same manner, and the remaining arm covers in all the ends—Thus:

BANDAGES, or "rollers," as they are otherwise called, are strips of linen, muslin or flannel, in width varying and cut from half an inch to three or four inches, and in length from two to ten yards. The material must

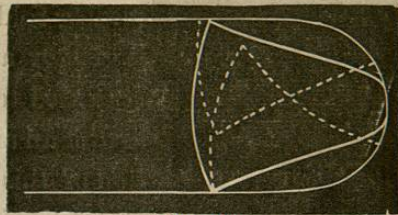


FIG. 16.

be unsized, free from seams or knots, and of thickness or quality depending upon the purpose to which it is to be applied. For ordinary uses, old linen, as sheets, is the best material. Unbleached muslin comes next in order, and for some purposes flannel may be employed. When possible it is better to have your bandages in an unbroken strip; when old sheets are used, they should *never be stitched together*; no matter how flat the seam may be, a reverse turn coming on one of these seams will not only frequently prove a source of

annoyance to the patient, but may even become an element of danger. The separate pieces, however, must not be less than six feet in length, and enough of them may be rolled up into one bandage to equal eight or ten yards. The selvage edge must always be torn off, and threads or ravellings not removed until the roller is made. The strips being prepared, make a few turns or folds of one end, on the knee, until a cylinder of some solidity is secured. Then, in the absence of a machine for the purpose, seize the cylinder with the thumb and first two fingers, applied at opposite ends of the roll, in the right hand, the unrolled portion uppermost, and to the left. The unwound portion is then seized between the thumb and forefinger of the left hand, and the bandage wound by rotating the roller, and exercising the necessary tension to give it solidity, with the left hand. A little practice will enable the student to form a hard, smooth roller,

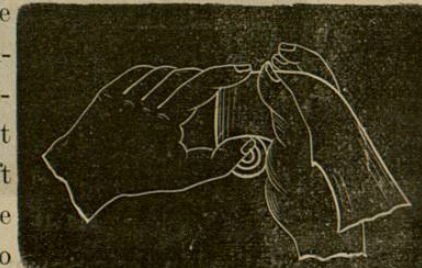


FIG. 17.

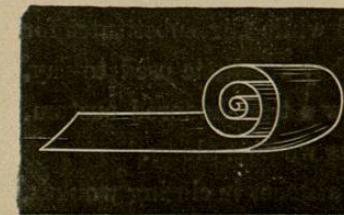


FIG. 18.

much neater and with less trouble than any of the ordinary machines will make. The roll thus formed, the threads and ravellings are to be pulled off, at each end of the cylinder, and the free end fastened with a pin or strip of plaster. The roll, for purposes of description, is known as the "body" (*a*), and the free end (*b*), the "initial extremity." The dressing tray should be kept supplied with rollers of different sizes, and the student should practice preparing them

until his motions are easy and rapid, and the bandage can be rolled up hard and smooth, without fatiguing the hand.

There are three general forms or varieties of bandages, which will be described at this time: *Simple rollers*, are as depicted at fig. 18. *Compound bandages* are those in which two or more rollers are combined, as the "double-headed" (a); "T" bandage (b); double "S" (c); cross (d); and

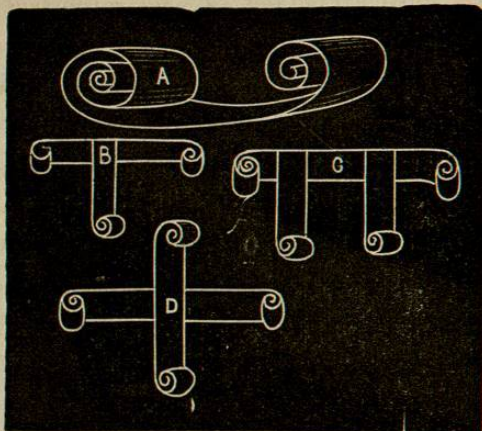


FIG. 19.

others to be noticed in their proper places. There is a form of bandaging, used in emergencies, of an improvised character, devised by M. MAYOR, of Lausanne, Switzerland, in 1832, in which cravats, handkerchiefs, towels, or the like, take the place of the ordinary methods, and while fair substitutes for the more artistic roller, I think they are little used to-day, at least in this country. To follow a time-honored custom, however, I shall give his method as we pass along.

Sutures, or material for making stitches in closing wounds, is finally to be noticed. There are three kinds used by modern surgeons, silk, metallic, and animal fibre. *Silk* is the ordinary white sewing silk, or, saddlers' silk. It should not, I think, be waxed, or even soaped; when care is taken to secure

a good quality, and hard twisted, there is no necessity for rubbing it down with anything. It is used for closing ordinary wounds. It *may* be treated with a weak solution of Carbolic acid, to destroy any septic properties that might attach to it when saturated with discharges, but I have never been able to see the necessity for it.

Metallic sutures, are made of tin, gold, silver, lead, iron, etc., and are to be used in wounds about the face, as their presence does not favor suppuration, as is the case with silk, and there is consequently less scarring. They are also useful in closing wounds in the cavities of the body, as they need never be removed, the irritation they produce being trifling. Hare-lip pins are analogous to sutures, being used for the same purpose; they are made of silver. After being pushed through both lips of the wound, silk is passed around both of the projecting ends, and tied in a figure of eight (*vide sutures*), or a rubber ring is slipped over.

Animal fibre, as cat-gut, horse-hair, deer's sinew, etc., is much used at the present day, particularly when sutures are used in wounds of the viscera, the external wound being at once closed. They are usually treated with Carbolic or Salicylic acid, to prevent septic poisoning, and may be cut off close to the knot, and the parts returned to the cavity. They are ultimately absorbed and carried off, and the external wound closed as if no deeper lesion existed.

Such is the list of articles to be provided for the dressing tray, or that may be needed in the treatment of the injured—other articles may be exceptionally useful, but there are few conditions that would demand articles of dressing not contained in the above.